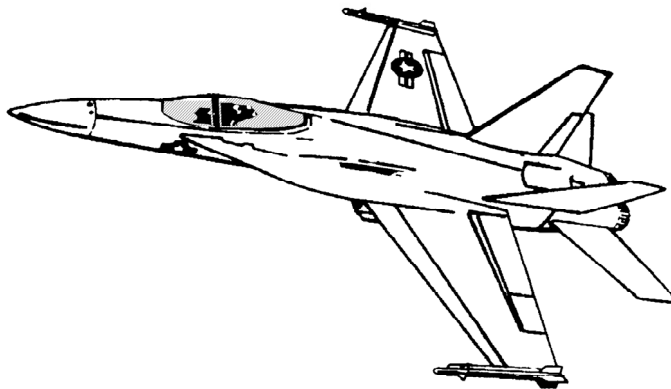


TECHNICAL MANUAL

**AIRBORNE WEAPONS/STORES  
LOADING MANUAL**

**NAVY MODEL  
F/A-18A/B/C/D  
AIRCRAFT  
161353 AND UP**



THIS MANUAL SUPERSEDES  
A1-F18AE-LWS-000 DTD 15 MARCH 2002,  
AND ALL CHANGES THERETO

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NATEC ELECTRONIC MANUAL

# A1-F18AE-LWS-000

## LIST OF EFFECTIVE PAGES

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Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title .....	.0	(12-24 Blank) .....	.0	27-1 - 27-9 .....	.0
A .....	.0	13-1 - 13-12 .....	.0	(27-10 Blank) .....	.0
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Record of Changes .....	.0	(14-14 Blank) .....	.0	(28-16 Blank) .....	.0
i - xxxii .....	.0	15-1 - 15-10 .....	.0	29-1 - 29-7 .....	.0
1-1 - 1-16 .....	.0	16-1 - 16-11 .....	.0	(29-8 Blank) .....	.0
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AIG 165

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SFWSPAC LEMOORE CA//04A//

CG FIRST MAW//ALD//

CG SECOND MAW//ALD//

CG THIRD MAW//ALD//

CG FOURTH MAW//ALD//

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POC/MR. N. WHEELER/CIV DS-3/-/-/TEL:760-437-4482/TEL:DSN 437  
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A. PAGE 14-1, PARA. 14-7, CHANGE NOTE PRIOR TO STEP 3 TO READ AS  
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CG FOURTH MAW//ALD//

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FIGURES 2-150 THROUGH 2-167 TITLES IN RECENTLY REVISED PUBLICATION.

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OF THE SUBJECT MANUAL UNTIL THE FORMAL UPDATE IS RELEASED.

A. FIGURE TITLES 2-150 THROUGH FIGURE 2-167 DO NOT REPRESENT THE  
ITEMS DEPICTED. DURING THE ELECTRONIC TRANSFER OF DATA THE ART FOR  
FIGURE 2-150 WAS DELETED AND THE ART FOR FIGURES 2-151 THROUGH 2-167  
SHIFTED TO REPLACE THE LOST ART. THE FIGURE TITLES DID NOT SHIFT  
WITH THE ART CAUSING THE SHIFTED ART TO BECOME MIS-TITLED. THE  
FOLLOWING SHIFTED FIGURES WILL BE IDENTIFIED AS FOLLOWS:

(1) FIGURE 2-150 TITLED MER/TER ELECTRICAL PIN - NO ART TO BE  
SHOWN, ART WILL BE ADDED NEXT PUBLICATION UPDATE.

(2) FIGURE 2-151 TITLED LAU-7 SLOTTED DETENT WRENCH SAFETY  
PIN, USE ART SHOWN ON FIGURE 2-150.

(3) FIGURE 2-152 TITLED WEIGHT ON WHEELS WEDGE. USE ART SHOWN ON FIGURE 2-151.

(4) FIGURE 2-153 TITLED AIM-9L/M DOME COVER, USE ART SHOWN ON FIGURE 2-152.

(5) FIGURE 2-154 TITLED AIM-9X DOME COVER AND TD COVER, USE ART SHOWN ON FIGURE 2-153.

(6) FIGURE 2-155 TITLED AIM-9L/M TDD COVER, USE ART SHOWN ON FIGURE 2-154.

(7) FIGURE 2-156 TITLED AIM-9L/M ROLLERON COVER, USE ART SHOWN ON FIGURE 2-155.

(8) FIGURE 2-157 TITLED AIM-9L/M COOLANT TANK REMOVAL TOOL, USE ART SHOWN ON FIGURE 2-156.

(9) FIGURE 2-158 TITLED CBU FUZE PROTECTIVE COVERS, USE ART SHOWN ON FIGURE 2-157.

(10) FIGURE 2-159 TITLED GBU DETECTOR COVER AND PACKING, USE ART SHOWN ON FIGURE 2-158.

(11) FIGURE 2-160 TITLED AIM-120 PROTECTIVE END CAP, USE ART SHOWN ON FIGURE 2-159.

(12) FIGURE 2-161 TITLED WING UNLOCK PLIERS, USE ART SHOWN ON FIGURE 2-160.

(13) FIGURE 2-162 TITLED AIM-7F/7M/7M H-BUILD WING LOCK TOOL, USE ART SHOWN ON FIGURE 2-161.

(14) FIGURE 2-163 TITLED AIM-120 FIN INSTALLATION/REMOVAL TOOL, USE ART SHOWN ON FIGURE 2-162.

(15) FIGURE 2-164 TITLED HANDCRANK (M61 GUN), USE ART SHOWN ON FIGURE 2-163.

(16) FIGURE 2-165 TITLED GUN POWERPACK ADAPTER, USE ART SHOWN ON FIGURE 2-164.

(17) FIGURE 2-166 TITLED HOOK RELEASE TOOL, USE ART SHOWN ON FIGURE 2-165.

(18) FIGURE 2-167 TITLED LAU-10 DETENT LIFT TOOL, USE ART SHOWN ON FIGURE 2-166.

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CHIEF OF NAVAL OPERATIONS  
OPNAV (OP-50)  
DEPARTMENT OF THE NAVY  
WASHINGTON, D.C. 20350

1 February 1991

**LETTER OF PROMULGATION**

1. The Airborne Weapons/Stores Loading Manual standardizes all respective loading or unloading procedures. The information provided in this manual is abbreviated by approved and verified NAVAIR Airborne Weapons, Stores and Release and Control checklists. The use of the Airborne Weapons/Stores Loading Manual or associated checklists is mandatory for all airborne weapons evolutions.
2. Procedural information contained herein assumes the aircraft is ready to receive the weapon/store, the weapon/store is ready to be loaded, and the weapon/store is ready for flight.
3. The Airborne Weapons/Stores Loading Manual/Checklists do not provide authorization for flight or tactical doctrine.
4. If there is a conflict between this manual and any other publication, with the exception of paragraph 1-3 of this publication, the provisions of this manual shall prevail until the conflict is resolved by the Commander, Naval Air Systems Command.

A handwritten signature in black ink, reading "JD Taylor", is positioned above the printed name.

**JEREMY D. TAYLOR**

*Rear Admiral, U.S. Navy*

*Director, Aviation Plans and Requirements Division*



RECORD OF CHANGES

CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY



**LIST OF VALID TECHNICAL PUBLICATION  
DEFICIENCY REPORTS (TPDRs) INCORPORATED**

<b>ORIGINATOR</b>	<b>TPDR/REPORT CONTROL NO.</b>	<b>LOCATION</b>
VMFA-115	00115-02-0009	Table 5-4 and 5-7
MWHS-1	01027-01-0001	Table 5-7
VMFA-112	08954-00-0018	Table 5-7
VMFA-112	08954-01-0012	Table 4-1
VMFA-112	08954-01-0013	Table 4-1
VMFA-112	08954-01-0014	Paragraph 4-13
VMFA-112	08954-01-0015	Table 4-19
VMFA-112	08954-01-0020	Paragraph 4-13
VMFA-112	08954-01-0024	Paragraph 4-13
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VMFA-232	09242-02-0001	Figure 2-31
VMFA-212	09434-02-0006	Paragraph 8-24
	(CAT 1 221000Z FEB 02)	
VFA-125	09485-02-0055	Glossary
COMSTRKFIGHT- WINGPAC	09520-03-0003	Section 16
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VFA-151	09558-02-0001	Table 3-1
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STRKFTRWPNSCOLPAC	35185-99-0002	Table 4-22
STRKFTRWPNSCOLPAC	35185-99-0010	Figure 3-7
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STRKFTRWPNSCOLPAC	47084-03-0001	Figure 2-40
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## **SAFETY SUMMARY**

The following are general safety precautions that are not related to any specific procedures and, therefore, do not appear elsewhere in this publication. These are precautions that personnel must understand and apply during many phases of aircraft rearming. FOLLOW APPROVED AND VERIFIED PROCEDURES.

The procedures specified in this manual are the approved and verified F/A-18 aircraft model rearming checklist procedures. These procedures must be understood by all personnel performing rearming evolutions.

Explosive accidents are prevented by thorough preplanning, extensive knowledge of ordnance and associated equipment, and careful handling of ordnance. The phrase "The life you save may be your own" applies especially to ordnance handlers. It is the responsibility of each individual to ensure that only safe, approved practices and procedures are followed when handling ordnance.

Safety devices shall always be used and maintained in proper working order.

Changes, modifications, disassembly or additions to ordnance material shall not be made without being approved by proper authority.

No ammunition or explosive shall be used in any store or accessory for which it is not designed/authorized.

Personnel who authorize movement of ordnance material by power shall ensure that an adequate safety switch is maintained in the area.

Personnel must be certified for handling aviation ordnance in accordance with the requirements of current instruction/directives.

Personnel working with or near high voltages shall be familiar with modern methods of resuscitation.

Restrictions specified in loading publications are mandatory and must be adhered to by all personnel.

Weapon tiedown straps shall be maintained on the weapon as long as possible when loading, and installed on the weapon as soon as possible when unloading.

Strict compliance with procedures and precautions in NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010 (Vol 1 and Vol 2) is mandatory when in a HERO environment.

The mechanical latching of weapons on aircraft racks/launchers shall be completed before the engine(s) on that aircraft is/are started unless otherwise specified in loading publications. However, operational commitments may dictate that weapons must be loaded/unloaded while engine(s) are turning. This extraordinary action must have prior approval of type commander.

Ordnance must never be handled in a rough and hasty manner.

Access to safety equipment such as fire alarms, firefighting equipment, first aid equipment, etc., shall not be blocked at any time.

**SAFETY SUMMARY (Continued)**

Anyone knowing of (a) defective ammunition or other explosive ordnance or defective containers or handling devices, (b) rough or improper handling, or (c) willful or accidental violation of the safety precautions, however slight, shall immediately report the act to his/her immediate supervisor.

All persons who supervise work in connection with the inspection, care, preparation, use, or handling ammunition or explosive shall exercise utmost care that all regulations and instructions are observed.

Do not work beneath a weapon/store unnecessarily.

Protective equipment such as safety eyeglasses or eye shields, safety helmet or hats, ear protective devices, gloves, mittens, etc., and safety shoes shall be worn as required to guard against personal injury.

Smoking. Smoking is not permitted in magazines, nor in the immediate vicinity of handling or loading operations involving explosives or ammunition.

Accident Reporting. Prompt reporting of accidents involving ordnance equipment, ammunition, and explosives where material damage or personnel injuries are sustained shall be made in accordance with current instructions. If doubt exists as to the necessity of a report, it shall always be resolved in favor of the report. Report in accordance with OPNAVINST 5102.1, 4790.2 and 8000.16.

Visual inspections of ammunition handling equipment shall be performed before, during and after use.

Improper adjustment of swaybraces can cause inadvertent release or hung weapons and may result in loss of life and/or damage to property.

When loading/handling forward firing ordnance, working in front of or behind will be held to a minimum.

APU/Engine noise can cause permanent damage to the unprotected ear. When APU/Engine is operating, personnel working in this area should wear regulation protective devices.

## **SECTION I**

### **INTRODUCTION**

#### **1-1. PURPOSE.**

1-2. The purpose of this manual is to make available in one publication, technical information on subjects affecting airborne conventional weapons/stores loading and unloading for F/A-18A/B/C/D aircraft. Technical information is presented for the use of personnel concerned with the requirements for weapon/store handling, inspection, fuze, loading and unloading, and aircraft weapon/store system. Procedural information provided in this manual is supplemented by approved and verified NAVAIR release and control checklists and loading checklists. This manual and the checklists are continuously monitored and updated as necessary to provide using personnel with the latest available verified data. The checklist pages are plastic coated for protection and repeated usage. They are not intended for maintaining a permanent record of weapons loading evolutions. Using personnel shall verify prior to use that they are using the most recently updated release and control checklist or loading checklist by checking NAVAIR 01-700, the Airborne Weapons Stores Publication Index.

#### **1-3. SCOPE.**

1-4. This manual provides using personnel with detailed information on the F/A-18A/B/C/D aircraft conventional weapons/stores systems, weapons/stores, ground support equipment, configuration and configuration conversion, release and control system checks and procedures for loading and unloading weapons and stores. The sequence and locations specified for conventional weapon/store evolutions are based upon normal operations and do not take emergency situations into consideration. In an emergency situation, comply with the requirements of local ordnance safety instructions, CV/Shore Base NATOPS procedures, or EOD instructions. The conditions and location for the PRIOR TO LAUNCH arming procedures specify the earliest in the launch sequence that the procedures may be performed. The conditions and location for the AFTER LANDING OR GROUND ABORT procedures specify the latest in the recovery sequence that the safing procedures may be performed.

1-5. Verified loading procedures are presented for all weapons and stores the aircraft is authorized to carry. Loading information contained in this manual, however, shall not be construed as authority to load/fuze any weapon or store for flight. The NWP 55-5-F/A18 Volume IV (Rev A), NWP 3-22.5-F/A-18 Volume III or A1-F18AC-TAC-020 Tactical Manual (Confidential) shall be consulted for authorization to load/fuze any weapon or store for flight.

1-6. New weapons data and loading procedures are added and/or existing procedures modified as soon as possible after verification. The loading and unloading procedures specified herein provide a positive approach for improving safety and for insuring reliability in the handling, loading, and delivery of conventional airborne weapons/stores. In the event of conflict between this manual and its associated checklist, the publication having the most current date shall take precedence. If this manual or its associated checklists conflict with other directives, the manual/checklists shall take precedence.

1-7. Commander Naval Air Warfare Center Weapons Division, Code PST 32080/331000D, China Lake, California 93555-6100 has technical responsibility for this manual and loading checklists.

#### **1-8. CHANGES TO MANUAL.**

1-9. Changes based on factual data accumulated as a result of loading experience will be published when necessary to add, delete or change information presented in this manual. Comments and recommendations concerning this publication should be forwarded in accordance with Technical Publication Deficiency Report (TPDR) procedures established in NOMMP 8000.16.

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**1-10. REQUISITION AND AUTOMATIC DISTRIBUTION OF NAVAIR TECHNICAL MANUALS.**

1-11. Procedures to be used by Naval activities and other Department of Defense activities requiring NAVAIR technical manuals are defined in NAVAIR 00-25-100 and NAVAIRINST 5605.5.4A. To automatically receive future changes and revisions to NAVAIR technical manuals, an activity must be established on the Automatic Distribution Requirements List (ADRL) maintained by the Naval Air Technical Data and Engineering Service Command (NATEC). To become established on the ADRL, notify your activity central technical publications librarian. If your activity does not have a library, you may establish your automatic distribution by contacting the Commanding Officer, NATEC, Attn: Distribution, NAS North Island, Bldg. 90, P.O. Box 357031, San Diego CA 92135-7031. Annual reconfirmation of these requirements is necessary to remain on automatic distribution. Please use your NATEC assigned account number whenever referring to automatic distribution requirements. If additional or replacement copies of this manual are required with no attendant changes in the ADRL, they may be ordered by submitting a MILSTRIP requisition in accordance with NAVSUP485 to Routing Identifier Code "NFZ". MILSTRIP requisitions can be submitted through your supply office, Navy message, or SALTS to DAAS (Defense Automated Address System), or through the DAAS or NAVSUP web sites. For assistance with a MILSTRIP requisition, contact the Naval Inventory Control Point (NAVICP) Publications and Forms Customer Service at DSN442-2626 or (215) 697-2626, Monday through Friday, 0700 to 1600 Eastern Time.

**1-12. ARRANGEMENT OF MANUAL.**

1-13. This manual is presented in sections to provide description, configuration, testing, loading, and unloading procedures for each store or for each group of similarly loaded stores. Loading and unloading procedures for similarly loaded stores (regardless of weapon family group) may be presented in the same section. This grouping of similarly loaded stores permits loading and unloading operations to be accomplished with a minimum of cross-referencing of procedures. If a 20 percent difference exists in loading and unloading procedures for a particular store covered in a section, separate procedures are provided for that particular store. The manual is divided into the following sections:

**SECTION I - INTRODUCTION.** This section contains the scope of coverage, arrangement of the manual, reference publications, technical directives, and information on how to use the manual.

**SECTION II - DESCRIPTION.** This section lists and describes systems and components necessary for carrying out a conventional weapons mission. Illustrations show the location of system components for systems in various model aircraft. In addition, descriptions and illustrations are provided for weapons systems, accessories, weapons/stores and armament support equipment (ASE).

**SECTION III - CONFIGURATION DATA.** This section contains information required for aircraft armament configuration conversions. Information is provided for verified station loading aircraft configuration capabilities and for conversions in the basic delivered aircraft to alternate weapons systems.

**SECTION IV - RELEASE AND CONTROL SYSTEM CHECKS.** This section provides procedures to be followed in performing operability tests of the aircraft armament systems. In some instances, aircraft systems can be checked with more than one item of test equipment. The procedures prescribed herein, however, are based upon use of only those equipment that have been verified.

**SECTION V - COMMON PROCEDURES.** This section contains information and procedural steps that are common to two or more weapon/store loading evolutions. In subsequent loading sections, reference will be made to these procedural steps when appropriate, rather than repeat them.

**SECTION VI AND SUBSEQUENT - LOADING.** These sections contain detailed loading procedures for single weapons/stores or for groups of similarly loaded weapons/stores. The procedures include aircraft



preparation, weapons/stores inspection, loading, postloading inspection, prior to launch checks/abort/after landing/turnaround and unloading procedures.

#### **1-14. WARNINGS, CAUTIONS AND NOTES.**

1-15. The following definitions apply to the Warnings, Cautions, and Notes found throughout the manual:

##### **WARNING**

An operating procedure, practice, etc., which if not correctly followed, could result in personnel injury or loss of life.

##### **CAUTION**

An operating procedure practice, etc., which, if not strictly observed; could result in damage to, or destruction of equipment.

##### **NOTE**

An operating procedure, condition, etc., which is essential to highlight.

#### **1-16. HOW TO USE THE MANUAL.**

1-17. The following outline indicates how to obtain maximum use of the contents of the manual. (Specific load and accessory configurations are included in Section III of this manual).

1. Refer to Section III to determine the required aircraft configuration.
2. If existing configuration requires changing, refer to Table 3-1 to determine applicable conversion.
3. Accomplish required conversion specified in conversion Table 3-1 and related checks.
4. Load weapons according to the applicable loading sections, accomplishing Section IV checks as required.
5. To ensure a safe and reliable load, the applicable weapons loading checklist must be utilized during actual loading operations. When the aircraft returns or aborts, accomplish the turnaround according to instructions contained in the applicable loading checklist.

#### **1-18. ASSUMPTIONS.**

1-19. In the preparation of the Armament System Check or weapons loading sections, the following assumptions were made:

1. Firefighting equipment available.
2. Aircraft parked (wheels chocked, tiedowns installed as required).
3. Ground safety devices installed.

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4. Equipment listed is authorized and verified.
5. Ejection seat safety pins installed and handle safe.
6. Armament Support Equipment (ASE) available and ready for use.
7. Aircraft properly serviced.
8. Standard aircraft system checks, other than armament completed.
9. Circuit breakers are assumed to be pushed in (closed) unless they are required to safe a specific system.
10. Weapons/stores assembled and ready for loading (including fuze installation when appropriate) before delivery to aircraft.
11. Aircraft in ready condition to receive weapon accessory equipment and weapons.
12. Aircraft/armament safety precautions complied with.
13. After loading/unloading, handling and safety equipment will be removed from area.
14. Only fully qualified and certified personnel, with a complete knowledge and understanding of the aircraft armament system or personnel under direct supervision of those who are fully qualified and certified are being utilized to accomplish all weapon/stores loading/unloading procedures in this manual.

**1-20. AIRCRAFT EFFECTIVITIES.**

1-21. Effectivity notations are required to distinguish between different aircraft configurations. Where a model configuration, designation, or serial number applies to a specific aircraft model, it will be noted in text or on the illustration. When a model is not designated, the information applies to all aircraft configurations.

**1-22. REFERENCE PUBLICATIONS.**

1-23. This manual provides the information necessary for ordnance personnel to test and load a weapons system installed in the aircraft. The user must refer to other publications for troubleshooting, installation, removal and maintenance procedures. Maintenance Instruction Manual (MIM) references and publications applicable to material contained in this manual are listed in Table 1-1. Additional reference publications which are not listed in Table 1-1 may be found in the latest Naval Aeronautic Publications Index. Refer to the list of military specifications and standards and the list of aeronautical standard drawings used by the Naval Air Systems Command for a listing of applicable specifications and standards used in the preparation of the airframe manuals.

**1-24. TECHNICAL DIRECTIVES.**

1-25. Technical Directives are letter-type publications issued to accomplish one-time changes, to impart precautionary instructions or inspections to aircraft or related equipment. Issue dates of the Technical Directives coincide with the availability of the parts required to make the change. Those Technical Directives concerning the data in this manual are listed in Table 1-2. Technical data in this manual made obsolete by a Technical Directive will be deleted in accordance with the following schedule:

Immediate Changes: Old data is deleted at the same time new change data is incorporated in the manual.

Urgent Changes: Old data is retained for two years after issue date of the applicable Technical Directive.

Routine Changes: Old data is retained for 3 years after the issue date of the applicable Technical Directive.

**Table 1-1. Reference Publications**

<b>PUBLICATION TITLE</b>	<b>PUBLICATION NO.</b>	<b>CROSS REFERENCE NO.</b>
<b>Technical Manual List</b>		
Aircraft Technical Documentation List	A1-F18AC-AML-000	
<b>NATOPS Flight Manual and Checklists</b>		
NATOPS Flight Manual	A1-F18AC-NFM-000	
NATOPS Performance Charts	A1-F18AC-NFM-200	
NATOPS Pocket Checklist	A1-F18AC-NFM-500	
NATOPS Pocket Checklist (EPE)	A1-F18AC-NFM-510	
NATOPS Servicing Checklist	A1-F18AC-NFM-600	
NATOPS Functional Checkflight Checklist	A1-F18AC-NFM-700	
<b>Tactical Manuals</b>	<u>(F/A-18A/B)</u>	
Tactical Manual (Secret)	NWP55-5-F/A18 Vol. I (Rev C) A1-F18AC-TAC-000(S)	
Tactical Manual (Secret)	NWP55-5-F/A18 Vol. II A1-F18AC-TAC-010(S)	
Tactical Manual (Secret)	<u>(F/A-18A+/C/D)</u> NWP3-22.5-F/A18A/C/D Vol. I A1-F18AE-TAC-000(S)	
Tactical Manual (Secret)	NWP3-22.5-F/A18A/C/D Vol. II A1-F18AE-TAC -010(S)	
Tactical Manual (Secret)	<u>(F/A-18A/B/C/D)</u> NWP55-5-F/A18 Vol. III or NWP3-22.5-F/A-18 Vol. III A1-F18AC-TAC-100(S)	
Tactical Manual (Confidential)	NWP55-5-F/A18 Vol. IV (Rev A) or NWP-3-22.5-F/A-18 Vol III A1-F18AC-TAC-020(C)	
Tactical Pocket Guide	NWP55-5-F/A18 A1-F18AC-TAC-300	
<b>General Maintenance Manuals</b>		
Fault Isolation Manual	A1-F18AC-FIM-000	
Memory Inspect Access	A1-F18AC-FIM-100	
Memory Inspect Access (Confidential)	A1-F18AC-FIM-110/(C)	

Table 1-1. Reference Publications (Continued)

PUBLICATION TITLE	PUBLICATION NO.	CROSS REFERENCE NO.
Fault Reporting Manual	A1-F18AE-FRM-000	
Fault Reporting Manual (Confidential)	A1-F18AC-FRM-010/(C)	
General Aircraft Information	A1-F18AC-GAI-000	
Parts List Index	A1-F18AC-IPB-450	
Line Maintenance Procedures	A1-F18AC-LMM-000	
Line Maintenance Access Doors	A1-F18AC-LMM-010	
Line Maintenance Emergency Procedures	A1-F18AC-LMM-020	
Line Maintenance Conditional Inspection Procedures	A1-F18AC-LMM-030	
Line Maintenance Boresighting	A1-F18AC-LMM-040	
Operational Flight Program Logic Diagrams	A1-F18AC-OLD-000 A1-F18AC-OLD-030 thru 070	
Plane Captain Manual	A1-F18AC-PCM-000	
Piping Installation Manual	A1-F18AC-PIM-000	
Software Configuration Manual	A1-F18AC-SCM-000	
Instrument Systems		
Principles of Operation	A1-F18AC-510-100	
System Schematics	A1-F18AC-510-500	
Air Data Computer System		
Principles of Operation	A1-F18AC-560-100	
System Schematics	A1-F18AC-560-500	
Maintenance Status Display and Recording System		
Description and Principles of Operation	A1-F18AC-580-100	
System Schematics	A1-F18AC-580-500	
Communication, TACAN, ADF, Electronic Altimeter, IFF and MIDS Systems		
Principles of Operation	A1-F18AC-600-100	
System Schematics	A1-F18AC-600-500	
Inertial Navigation and Backup Attitude and Navigation System		
Principles of Operation	A1-F18AC-730-100	
System Schematics	A1-F18AC-730-500	

**Table 1-1. Reference Publications (Continued)**

<b>PUBLICATION TITLE</b>	<b>PUBLICATION NO.</b>	<b>CROSS REFERENCE NO.</b>
Digital Map Set		
Description and Principles of Operation	A1-F18AG-731-100	
System Schematics	A1-F18AG-731-500	
Weapon Control Systems		
Principles of Operation	A1-F18AC-740-100	
	A1-F18AE-740-100	
	A1-F18AE-740-110	
System Schematics	A1-F18AC-740-500	
	A1-F18AE-740-500	
	A1-F18AC-740-510	
	A1-F18AE-740-510	
	A1-F18AC-740-520	
	A1-F18AE-740-520	
Mission Computer System		
Principles of Operation	A1-F18AC-741-100	
	A1-F18AE-741-100	
	A1-F18AE-741-110	
System Schematics	A1-F18AC-741-500	
	A1-F18AE-741-500	
Radar System		
Principles of Operation	A1-F18AC-742-100	
System Schematics	A1-F18AC-742-500	
Multipurpose Display Group		
Principles of Operation	A1-F18AC-745-100	
	A1-F18AG-745-100	
System Schematics	A1-F18AC-745-500	
	A1-F18AG-745-500	
Gun System		
Principles of Operation	A1-F18AC-750-100	
Testing and Troubleshooting	A1-F18AC-750-200	
System Maintenance with IPB	A1-F18AC-750-300	
System Schematics	A1-F18AC-750-500	
Tactical Electronic Warfare Systems		
Principles of Operation	A1-F18AC-760-100	
	A1-F18AE-760-100	
System Schematics	A1-F18AC-760-500	
	A1-F18AE-760-500	
Video Recording and Reconnaissance System, Organizational Maintenance Testing and Troubleshooting	A1-F18AE-770-200	
Cross Servicing Guide	A1-F18AC-CSS-000	

Table 1-1. Reference Publications (Continued)

PUBLICATION TITLE	PUBLICATION NO.	CROSS REFERENCE NO.
<b>Checklists</b>		
Checklist - Release and Control (Basic)	A1-F18AC-LWS-200 A1-F18AE-LWS-200	
Checklist - Release and Control (A/A Missiles)	A1-F18AC-LWS-210 A1-F18AE-LWS-210	
Checklist - Release and Control (A/G Missiles)	A1-F18AC-LWS-220 A1-F18AE-LWS-220	
Checklist - Bombs Retard/Nonretard	A1-F18AE-LWS-270	
Checklist - Fire Bombs	A1-F18AE-LWS-280	
Checklist - Mk-62/Mk-63 Series Mines	A1-F18AE-LWS-320	
Checklist - Mk-65 Mine	A1-F18AE-LWS-350	
Checklist - Mk-50 Series Mines	A1-F18AE-LWS-360	
Checklist - Pyrotechnics	A1-F18AE-LWS-410	
Checklist - CBU	A1-F18AE-LWS-420	
Checklist - Practice Bombs	A1-F18AE-LWS-450	
Checklist - Fuel Tanks/Stores	A1-F18AE-LWS-460	
Checklist - Banner Tow Target	A1-F18AE-LWS-490	
Checklist - AIM-120 (AMRAAM)	A1-F18AE-LWS-510	
Checklist - AIM-7 (SPARROW)	A1-F18AE-LWS-520	
Checklist - AIM-9 (SIDEWINDER)/ INSTRUMENTATION PACKAGES	A1-F18AE-LWS-530	
Checklist - PASE AGM-65 (MAVERICK)	A1-F18AE-LWS-560	
Checklist - AGM-84 Series (HARPOON/SLAM/ SLAM ER)	A1-F18AE-LWS-580	
Checklist - PASE (AGM-88) (HARM)	A1-F18AE-LWS-590	
Checklist - AGM-154A (JSOW)	A1-F18AE-LWS-610	
Checklist - Data Pod	A1-F18AE-LWS-650	
Checklist - Guided Bomb Unit (GBU-10, 12, 16, 24)	A1-F18AE-LWS-660	
Checklist - GBU-24D/B (limited distribution)	A1-F18AE-LWS-661	
Checklist - GBU-31/32/35 Series (JDAM)	A1-F18AE-LWS-670	
Checklist - Arm/Dearm	A1-F18AE-LWS-680	
Checklist - ECM (ALE-39/47)	A1-F18AE-LWS-720	
Checklist - ALE-43	A1-F18AE-LWS-725	
Checklist - TALD/ITALD	A1-F18AE-LWS-730	

Table 1-1. Reference Publications (Continued)

PUBLICATION TITLE	PUBLICATION NO.	CROSS REFERENCE NO.
Checklist - AN/ALQ-167/AN/AST-6(A)	A1-F18AE-LWS-740	NAVAIR 11-15-8
Checklist - Rocket Launchers	A1-F18AE-LWS-750	
Checklist - Guns	A1-F18AE-LWS-760	
Checklist - Gun Jam Clearing	A1-F18AE-GJC-100	
<b>General</b>		
U.S. Navy Aircraft Firefighting and Rescue Manual	NAVAIR 00-80R-14	
NATOPS Conventional Weapons Handling Procedures Manual (ASHORE)	NAVAIR 00-80T-103	
CVNATOPS Manual	NAVAIR 00-80T-105	
Aircraft Signals NATOPS Manual	NAVAIR 00-80T-113	
Ammunition Afloat (Vol. I, II)	OP 4	
Ammunition and Explosives Ashore (Vol. I)	OP 5	
Navy Transportation Safety Handbook (Vol. I)	OP 2165	
Toxic Hazards Associated with Pyrotechnic Items	OP 2793	
Ordnance Safety Precautions	OP 3347	
Electromagnetic Radiation Hazards	NAVSEA OP 3565/ NAVAIR 16-1-529/ NAVELEX 0967-LP-624-6010	
Transportation and Storage Data For Ammunition, Explosives and Related Hazardous Material (Vol. I, Vol. II and Vol. III)	NAVSEA SW020-AC-SAF-010 NAVSEA SW020-AC-SAF-020 NAVSEA SW020-AC-SAF-030	
Naval Ordnance Maintenance Management Program	NOMMP 8600.16	
<b>Test Equipment</b>		
AN/ALM-70-70A Countermeasures Dispenser Test Set	NAVAIR 16-30ALM70-1	
AN/ALM-225 Countermeasures Dispenser Test Set	NAVAIR 16-30ALM225-1	
AN/AWM-42A Fuze Function Control Test Set	NAVAIR 16-30AWM42-1	
AN/AWM-54 Aircraft Firing Circuit Test Set	NAVAIR 16-30AWM54-1	
AN/AWM-92B Aircraft Weapon Control Test Set	NAVAIR 16-30AWM92-1	
AN/AWM-96 Aircraft Weapon Control Test Set	NAVAIR 16-30AWM96-2	
AN/AWM-100 Test Set	AT-901AC-S81-010	
AN/AWM-102 Firing Circuit Test Set	16-30AWM102-1	
TS-3519D/DSM Simulator Test Set	NAVAIR 16-35TS3519-2	
AN/USM-311 Multimeter		
77 AN Multimeter		

Table 1-1. Reference Publications (Continued)

PUBLICATION TITLE	PUBLICATION NO.	CROSS REFERENCE NO.
Missile Prelaunch Data Computer and Missile Prelaunch Data Memory Loader Organizational, Intermediate with IPB	NAVAIR 16-35CP1876G-1	
<b>Accessories</b>		
AN/ALE-39 Countermeasures Dispensing Set, Operation and Maintenance Instructions with IPB	NAVAIR 16-30ALE39-1	
AN/ALE-47 Countermeasures Dispensing Set, Operation and Maintenance Instructions with IPB	NAVAIR 16-30ALE47-1	
BRU-32/A, A/A, B/A Ejector Rack Assembly, Intermediate Maintenance with IPB	AW-382AC-750-000	
BRU-33/A, A/A Vertical Ejector Rack Assembly, Intermediate Maintenance with IPB	AW-382AC-750-010	
BRU-41/A (IMER), BRU-42/A (ITER) Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown	NAVAIR 11-75A-603	
LAU-7/A Guided Missile Launcher, Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown	NAVAIR 11-75A-54	
LAU-115/A, A/A, C/A, D/A Aircraft Guided Missile Launcher, Intermediate and Depot Maintenance with IPB	AW-394AC-750-000	
LAU-116/A, A/A, B/A Aircraft Guided Missile Launcher, Intermediate and Depot Maintenance with IPB	AW-394AC-750-010	
LAU-117/A(V)2/A Aircraft Guided Missile Launcher, Operation and Service with IPB	NAVAIR 11-75A-79	
LAU-118(V)1/A Aircraft Guided Missile Launcher, Intermediate Maintenance with Illustrated Parts Breakdown	NAVAIR 11-75A-78	
LAU-127A/A, B/A, C/A Aircraft Guided Missile Launcher, Intermediate Maintenance with Illustrated Parts Breakdown	NAVAIR 11-75A-514	
MER/TER Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown	NAVAIR 11-75A-57	
SUU-62/A, A/A Aircraft Fuselage Centerline Pylon, Intermediate Maintenance with IPB	AW-386AC-750-000	
SUU-63/A, A/A, C/A Aircraft Wing Pylon, Intermediate Maintenance with IPB	AW-386AC-750-030	



**Table 1-1. Reference Publications (Continued)**

<b>PUBLICATION TITLE</b>	<b>PUBLICATION NO.</b>	<b>CROSS REFERENCE NO.</b>
<b>Ordnance Associated Publications Weapons/ Stores</b>		
Aerial Tow Targets Organizational Maintenance with IPB	NAVAIR 28-10A-23	
AGM-65 Maverick	NAVAIR 11-120-58	
AGM-84 Harpoon Missile	NAVAIR 01-AGM84A-2-1	
AGM-88 HARM Guided Missile	NAVAIR 01-AGM88A-2	
AIM-120 AMRAAM, Intermediate Maintenance with IPB (AFLOAT)	AW-820CE-MIB-010 NAVAIR 11-120-23	
Air Launch Guided Missile Weapon Systems	Technical Instructions E-5-68-1 (FMSAEG)	
Airborne Bomb and Rocket Fuze Manual	NAVAIR 11-1F-2	
Airborne Weapons/Store Publication Index	NAVAIR 01-700	
Aircraft General Purpose Bombs, Fire Bombs, Practice Bombs, and Components	NAVAIR 11-5A-17	
Aircraft Rocket Systems 2.75 inch and 5.0 inch	NAVAIR 11-75A-92	
Ammunition for Navy 20mm/25mm Aircraft Guns	NAVAIR 11-1-119	
Ammunition Unserviceable, Suspended and Limited Use	TW024-AA-ORD-010	
Devices for Aircraft and Associated Equipment (CADS)	NAVAIR 11-100-1.3	
General Use of Cartridges and Cartridge Actuated	NAVAIR 11-100-1.1	
Guided Missile AIM-9/H/L/M and Training Missile	NAVAIR 01-AIM9-2	
Linkless Ammunition Loading System, A/E 32K-7	NAVAIR 19-1-267	
M61A1 Gun	NAVAIR 11-95M61A1-1	
(M61A1) 20mm System; Technical Manual, Ship Weapon Installations Manual	NAVAIR 11-120-35	
Mines, Authorized Configuration Data for Underwater	NAVSEA SW 550-FO-IDX-010 NAVSEA SW 550-FO-IDX-020	NAVSEA OP 3504
Mines Underwater: Actuation Description, Assembly, and Test	NAVSEA 4363, Vol. 3	
Mines Underwater: Laying, Handling, Shop, Mechanical Sweep, and Hunting Description, Assembly, and Disassembly	NAVSEA 4363, Vol. 4	

Table 1-1. Reference Publications (Continued)

PUBLICATION TITLE	PUBLICATION NO.	CROSS REFERENCE NO.
Mine, Underwater Mk 52/55 Mod 11	NAVSEA SW 551-A1-MMI-020	NAVSEA OD 10135
Mine, Underwater Mk 56 Mod 0, Service	NAVSEA 2572	
Mine, Underwater Mk 62 Mod 0	NAVSEA SW 550-AB-MMI-010 (Vol. I)	
Mines, Underwater Mk 62, 63, 64 and 65 (All Mods)	NAVSEA SW 550-AB-MMI-060	
Mine, Underwater Mk 65 Mods 0 and 1	NAVSEA SW 550-AB-MMI-040 (Vol. I)	
NAVAIR Expendable Countermeasures Directory	NAVAIR 16-1-539	
Navy Ammunition Logistics Codes	NAVAIR 11-1-116B/ TW010AA-ORD-030	
Operational Characteristics of U.S. Naval Mines	NAVSEA OP 2637 (Vol. II)	
Organizational, Intermediate (Fleet) Maintenance Instructions Tactical Air Launched Decoy (TALD/ITALD) All Models	NAVAIR 01-A/B 37U-1	
Performance Data Reporting Program Sparrow III Guided Missile AIM-7/RIM-7	NAVAIR 01-265GMAD-9-3.1 NAVAIR 01-265GMAD-9-4	
Preoperational Checklist Linkless Ammunition- Loading System (LALS)	NAVAIR 19-600-148-6-1	OP 2213
Pyrotechnics Screening, Marking, and Countermeasure Devices	NAVAIR 11-15-7 NAVSEA SW 050-AB-MMA-010 (Vol. 1)	
Ships Technical Publication System (STEPS) Publication Master Index	STEPS Report 101	
WAM - Air-Intercept Missiles (Tactical) and Air- Ground Missiles (Tactical), Vol. I and Vol. II	NAVAIR 11-140-6 (Series)	
WAM - CBU's	NAVAIR 11-140-9	
WAM - LGB/GBUs	NAVAIR 11-140-10	
WAM – MK 80/BLU Series Fire Bombs and Practice Bombs	NAVAIR 11-140-5	
WAM - Pyrotechnics	NAVAIR 11-140-7	
20MM Double Ended Linkless Gun System A/A49-A1, P/N 211F930, Intermediate Maintenance with IPB	AW-381AC-750-000	

**Table 1-1. Reference Publications (Continued)**

<b>PUBLICATION TITLE</b>	<b>PUBLICATION NO.</b>	<b>CROSS REFERENCE NO.</b>
<b>Loading/Handling Equipment Publications</b>		
Aerial Tow Targets and Associated Equipment	NAVAIR 28-10A-501	
Airborne Weapons Handling Equipment (Shipboard)	NAVAIR 19-100-2	
Airborne Weapon Support Equipment (AWSE) Configuration Manual	NAVAIR 11-140-25	
Loader, Air Launched Weapons A/S32K-1 Series	NAVAIR 19-15BA-39	
Loading/Handling Equipment Publications Approved Handling Equipment for Weapons and Explosives	NAVAIR 19-100-1.1 NAVAIR 19-100-1.2	NAVSEA OP 2173 (Vol. 1-2)
Single Hoist Ordnance Loading System (SHOLS)	NAVAIR 19-15BD-6	
Weapons Cradles Small Airfield for Tactical Support (SATS)	NAVAIR 19-25-133	
Weapons Support Equipment General Adapters	NAVAIR 19-100-3	

Table 1-2. Record of Technical Directives

Directive No.	Issue Date	Title	Purpose of Change	Incorporated In Manual
AAC 767	Jun 82	F/TF/A-18 weapons control system, BRU-33/A, modification of	To prevent hung bombs that result in loss of A/G capability	1985
AAC 769	Sep 82	F/TF/A-18 weapons control system, wing pylon SSU-63/A and inbd/outbd attach fittings, modification of	To modify A/C wing pylon and attach fittings to improve removal of aft attach quick release pin during pylon download	1985
AAC 773	May 83	F/TF/A-18 fuselage centerline pylon SUU-62/A, modification of	To modify C/L fuel/air coupling valve to improve refuel performance	1985
AAC 778	Oct 84	F/TF-A-18 weapons control system, BRU-32/A modification of	To prevent BRU-32/A mechanism damage due to premature linear actuator locking while loading stores with power applied to A/C	1985
AAC 779	Oct 84	F/TF-A-18 weapons control system, BRU-33/A modification of	To prevent actuator damage when stores are loaded with power applied to A/C	1985
AAC 901	-	Missile Rail Launcher LUA-115A/A Relay/Diode Assembly Installation	Provide for enhanced performance, converts launcher to LAU-115-B/A	1992
AAC 986	-	Installation of modified SUU-62 Centerline Pylon (TE-27048-1) (ATARS Pod)	Refer to title	2000
AFC 037	Feb 84	Deletion of Landing Gear Handle Logic from AN/AWW-4 electrical fuzing system	To allow ground checkout of AWW-4 system without raising gear handle	1987
AFC 160	3 Jan 92	Dual Cockpit Control Capability For Nuclear Missions	Install aft Nuc Consent Control panel, F/A-18D 164866 AND UP ALSO; F/A-18D 163986 THRU 164738	1993

**Table 1-2. Record of Technical Directives (Continued)**

<b>Directive No.</b>	<b>Issue Date</b>	<b>Title</b>	<b>Purpose of Change</b>	<b>Incorporated In Manual</b>
AFC 233	26 Mar 96	Installation of ALE-39 Programmer reset switch in F/A-18 cockpit	Add a thumb guarded reset to the ALE-39 CMDS on aft end of Antenna Select Control Panel in F/A-18A and F/A-18C cockpits	
AFC 244	-	Installation of Advanced Tactical Air Reconnaissance System (ATARS)	Install ATARS System	2002
AFC 293	-	Capability to Fire Forward Looking Infrared (FLIR) Laser from Aft cockpit	Provide a means of firing the FLIR laser from the F/A-18D aft cockpit	2000
AVC 2812	19 Nov 84	F/A-18 and F/A-18B weapon control system, Wing Tip Command Signal Encoder-Decoder, modification	Upgrade weapons capability	1989
AVC 2813	19 Nov 84	F/A-18 and F/A-18B weapon control system, Wing Pylon Command Signal Encoder-Decoder modification		1989
AVC 2814	19 Nov 84	F/A-18A and F/A-18B weapon control system, Fuselage Command Signal Encoder-Decoder modification		1989
AVC 2864	19 Dec 84	Weapon system Armament Computer modification		1989
AVC 4228	-	Wing Pylon Encoder-Decoder, Additional Weapons Capability	Install-110 Encoder-Decoder	1992
AVC 5149	13 Dec 02	AN/ALE-39 Countermeasures Dispensing System, Modification of	Modification of dispenser housing and dispenser block (magazine) to remove and replace the positive lock fasteners.	2002
AWB 388-A1		Inspection of LAU-10 series rocket launchers for proper location of retaining ring mode joint	Refer to title	

Table 1-2. Record of Technical Directives (Continued)

Directive No.	Issue Date	Title	Purpose of Change	Incorporated In Manual
AWC 277	1 May 86	Preparation of LUU-2 flares for MER carriage	To prevent separation of the timer from flare while on A/C by installing flare timer guard	1988
AWC 318 Rev A	11 Jul 94	Retrofit of Thermally Protected Bombs Mk 83 Mods 4 and 5 with new suspension lug Mk 6 Mod 1	Refer to title	1988
AWC 372 Rev A	20 Aug 92	Mk 20 Mod and CBU-78 Modification of	Improve fuze impeller band tether, replace fin release band retention system, reidentifies weapons to new CBU series	1992
AYC 981	-	Modification of F/A-18 Tow Banner Adapter	Increase adapter range of motion and reidentify P/N	1998
SEC-5177	1 May 96	AN/AWM-92 Aircraft Weapon Control Test Set	Modification for F/A-18 Video Logic	1996
SEC-5330		AN/AWM-92 Aircraft Weapon Control Test Set	Modification for F/A-18 Video Logic	1998
SEC-5602	22 Nov 02	AN/ALM-225 Countermeasures Dispensing System Test Set, Modification of	Provides instruction to replace the retaining stud and receptacle on test set, and reidentifies test set as AN/ALM-291	2002

## SECTION II DESCRIPTION

### 2-1. INTRODUCTION.

2-2. This section contains descriptive information on the F/A-18 aircraft conventional weapons systems, suspension and accessory equipment, weapons and stores data, and ground support equipment.

### 2-3. AIRFRAME.

2-4. Differences in configuration will be identified by effectivity notes on the pertinent illustrations and in the related text. Effectivity data appearing on sheet one only of a multiple sheet illustration is applicable to all aircraft. If differences in equipment exist, each sheet will note the applicable effectivity. Configurations or illustrations shown or discussed without effectivity notes are applicable to all aircraft. Effectivity notations within this manual shall be shown as follows:

1. Data common to F/A-18C and F/A-18D - use model and serial number (when required).

EXAMPLE: F/A-18C/D 163427 and up

2. Data peculiar to F/A-18A - use model as applicable.

EXAMPLE: F/A-18A

3. Data peculiar to F/A-18B - use model as applicable.

EXAMPLE: F/A-18B

4. Effectivity notations that combine production and before or after retrofit effectivities use the word "also" as the separator between production and retrofit:

EXAMPLE: 161925 and up; also 161702 thru 161925 after F/A-18 AFC74

5. Major upgrades are referred to by commonly used nomenclature.

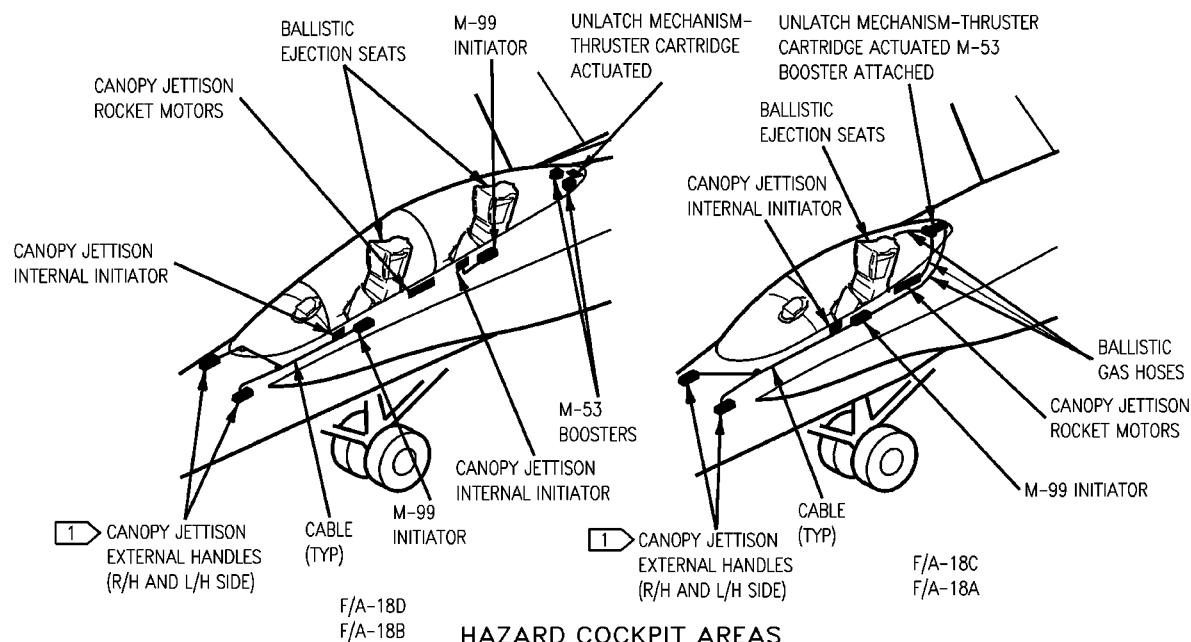
EXAMPLE: SMUG, F/A-18A+, F/A-18 Night Attack

2-5. **AIRCRAFT EXTERNAL HAZARDS.** The aircraft presents certain hazards (Figure 2-1) to personnel working in and around it. Ordnance loading crews should familiarize themselves with these areas and use caution in any operations required in or around the aircraft.

2-6. **GROUND SAFETY DEVICES.** Ground safety devices (Figure 2-2) are installed immediately after aircraft flight. While it may not be the responsibility of loading crew personnel to install these devices, they must be aware of the requirement for these devices. Personnel will verify that ground safety devices are installed prior to working in or around the aircraft.

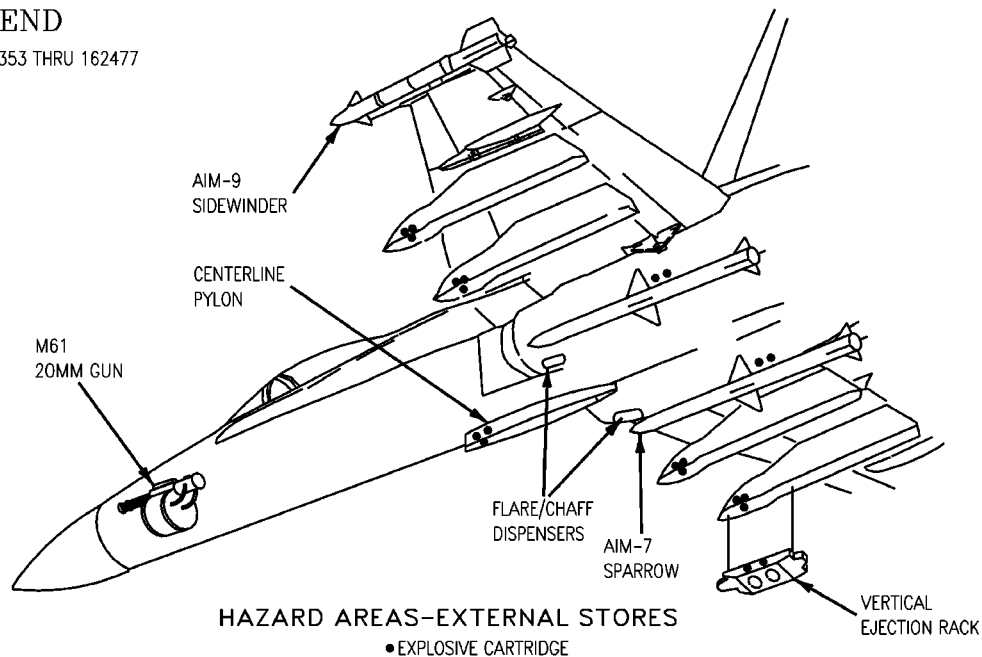
2-7. **EXTERNAL ELECTRICAL POWER AND GROUNDING.** Provisions are incorporated for external power application (Figure 2-3). Deck/ground power is supplied by an external power source via the external power receptacle. The external power receptacle is located on the left side of the forward fuselage at Door 9, accessible from deck level. The external power connector connects 115 volt, three phase, 400 hertz AC external

# Description



## LEGEND

1 F/A-18 161353 THRU 162477



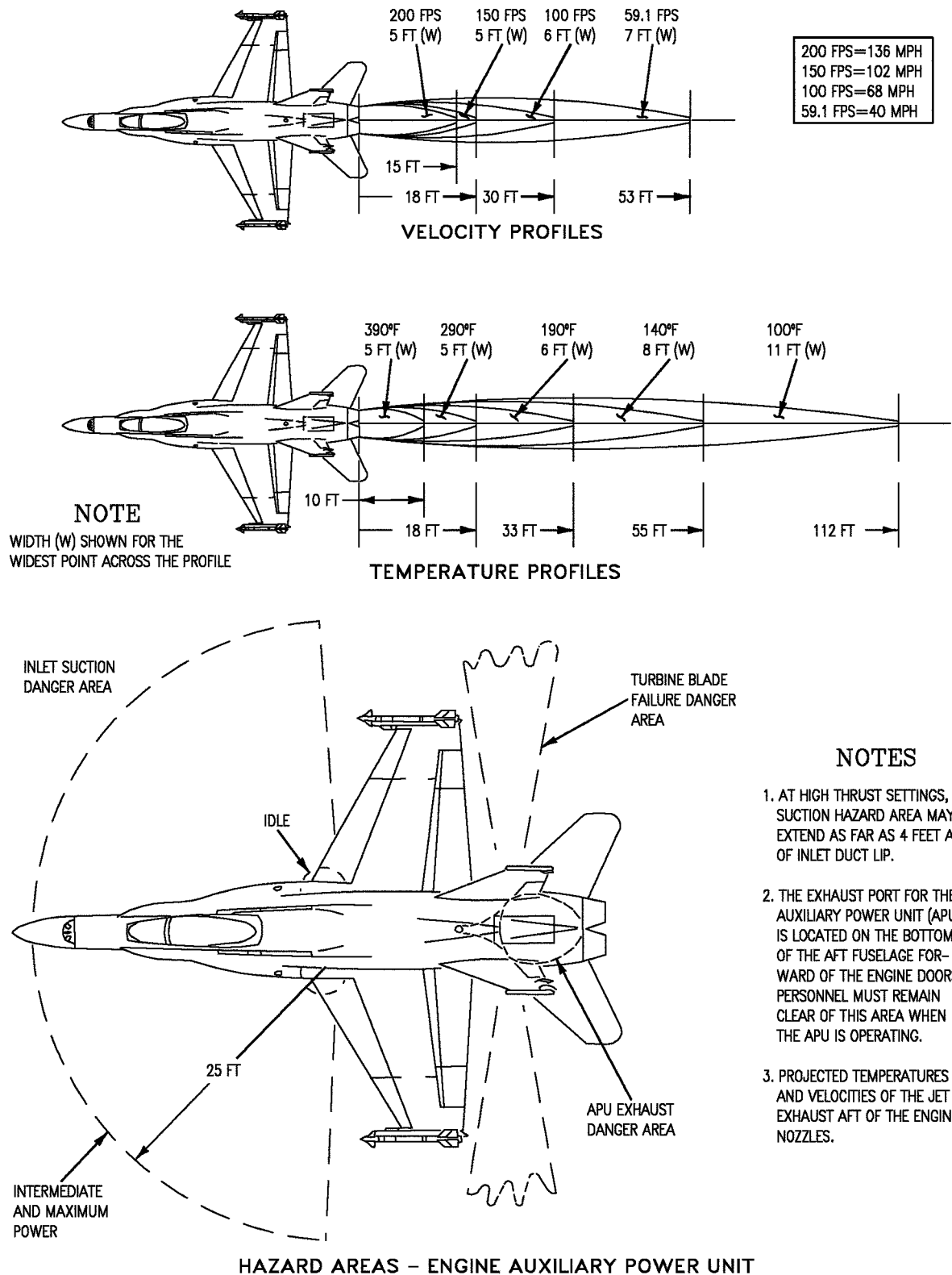
•EXPLOSIVE CARTRIDGE

## NOTES

- EXTERNAL FUEL TANKS, VERTICAL EJECTION RACKS, MISSILE LAUNCHERS AND/OR CONVENTIONAL WEAPONS LOADED ON WING, FUSELAGE OR CENTERLINE PYLONS ARE DROPPABLE WHEN EXPLOSIVE CARTRIDGES ARE INSTALLED. IMMEDIATE AREAS MUST BE CONSIDERED DANGEROUS FOR MAINTENANCE PERSONNEL WHEN POWER IS ON THE AIRCRAFT.
- THE AREA FORWARD AND AFT OF ALL MISSILES AND FORWARD OF GUN IS POTENTIALLY DANGEROUS.
- AIRCRAFT CARRYING MUNITIONS SHOULD BE LOADED, UNLOADED AND/OR PARKED IN DESIGNATED PARKING AREAS.

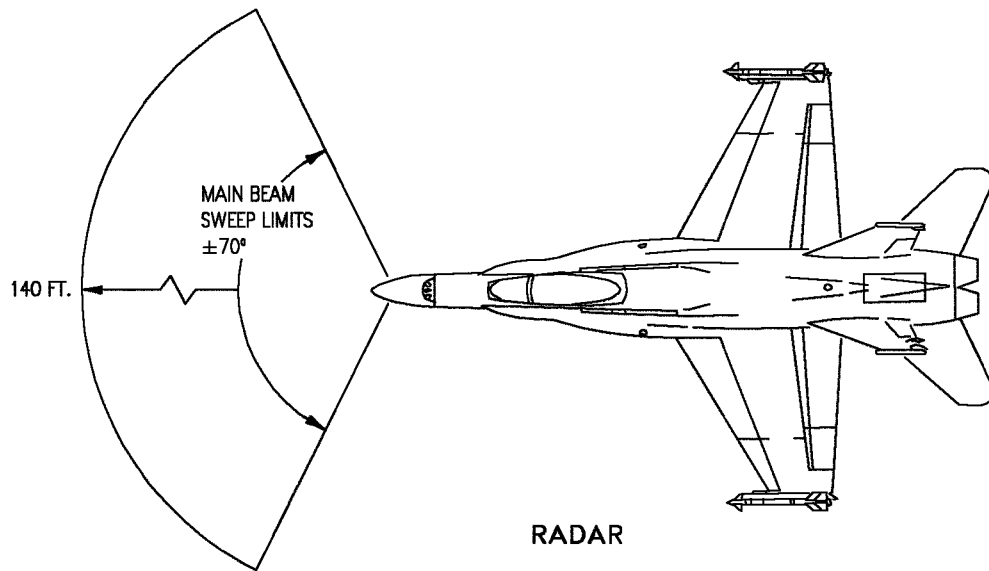
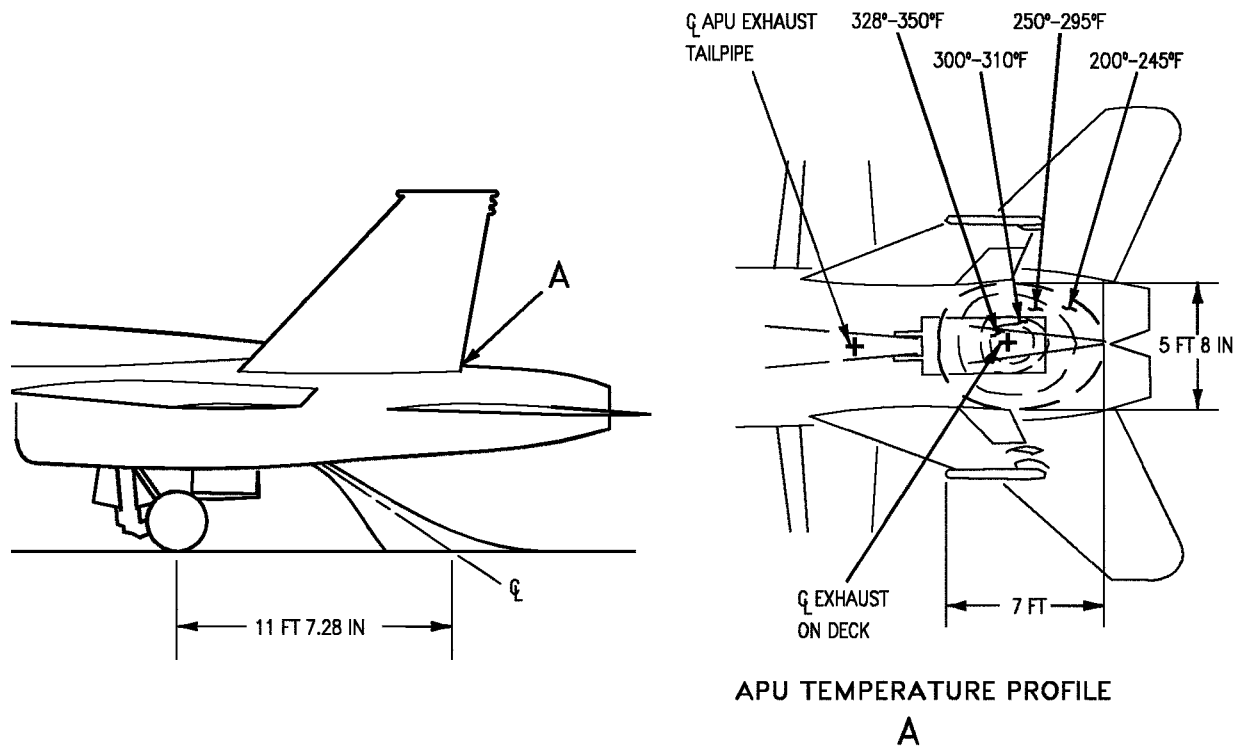
Figure 2-1. Aircraft External Hazards (Sheet 1 of 4)





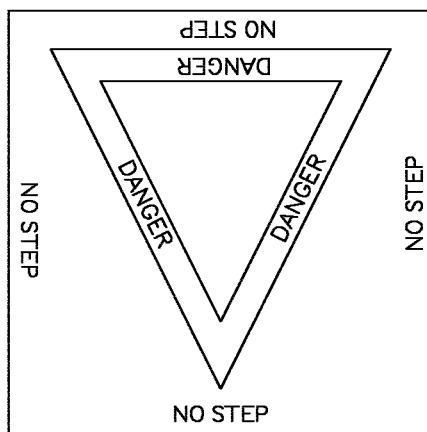
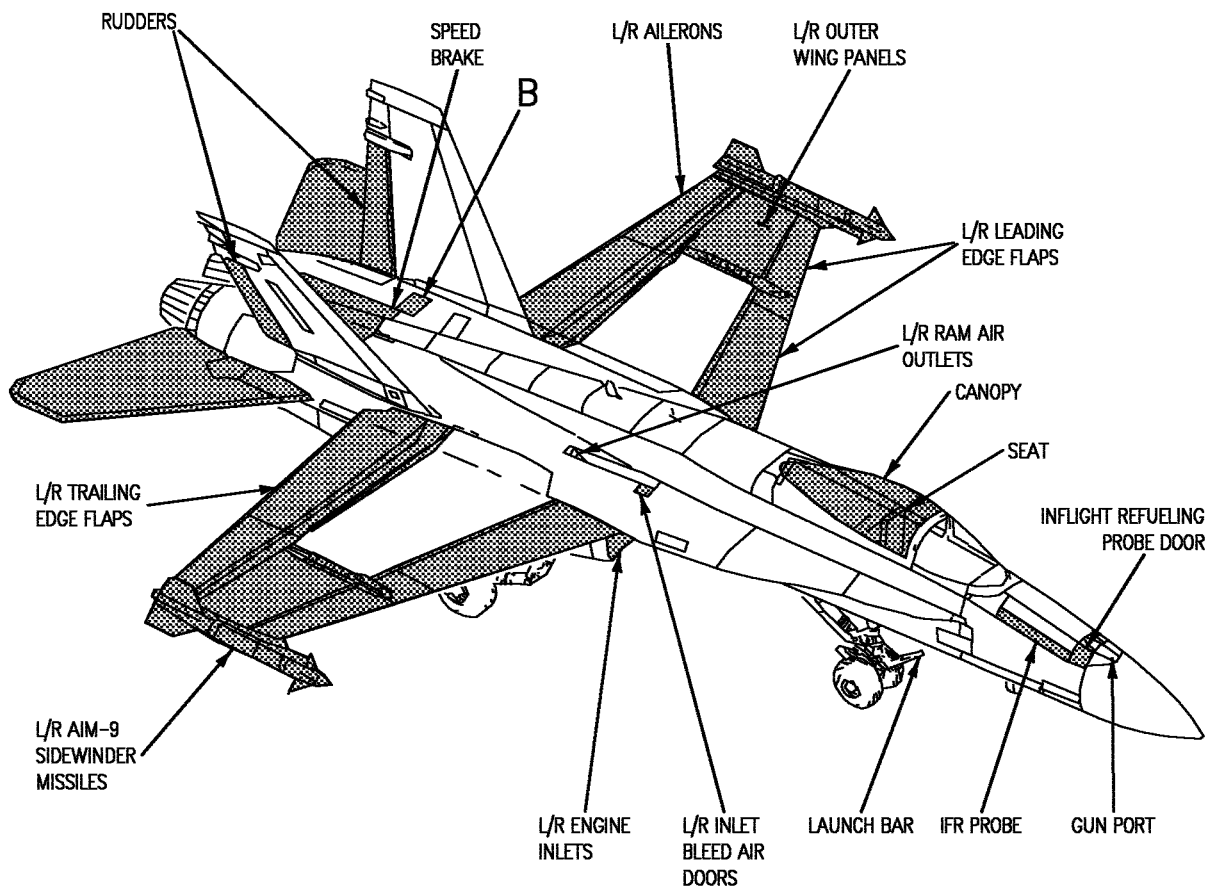
**Figure 2-1. Aircraft External Hazards (Sheet 2)**

Description



HAZARD AREAS – ELECTROMAGNETIC RADIATION

Figure 2-1. Aircraft External Hazards (Sheet 3)



DFIRS EXPLOSIVE DOOR

B

## WARNING

- LEADING EDGE FLAPS MAY EXTEND IMMEDIATELY IF RESIDUAL HYDRAULIC PRESSURE EXCEEDS 800 PSI WHEN AIRCRAFT IS SHUTDOWN. TO PREVENT PERSONNEL INJURY, AVOID LEADING EDGE FLAPS AND PYLONS FOR APPROXIMATELY 10-SECONDS AFTER ENGINE SHUTDOWN.
- 164670 AND UP; ALSO 164627 THRU 164669 AFTER F/A-18 AFC 126, DOOR 63L IS REPLACED WITH A DEPLOYABLE FLIGHT INCIDENT RECORDER SET (DFIRS) EXPLOSIVE DOOR, REFER TO A1-F18AE-580-300, WPO12 00.

## HAZARD AREAS-CONTROL SURFACES

Figure 2-1. Aircraft External Hazards (Sheet 4)

Description

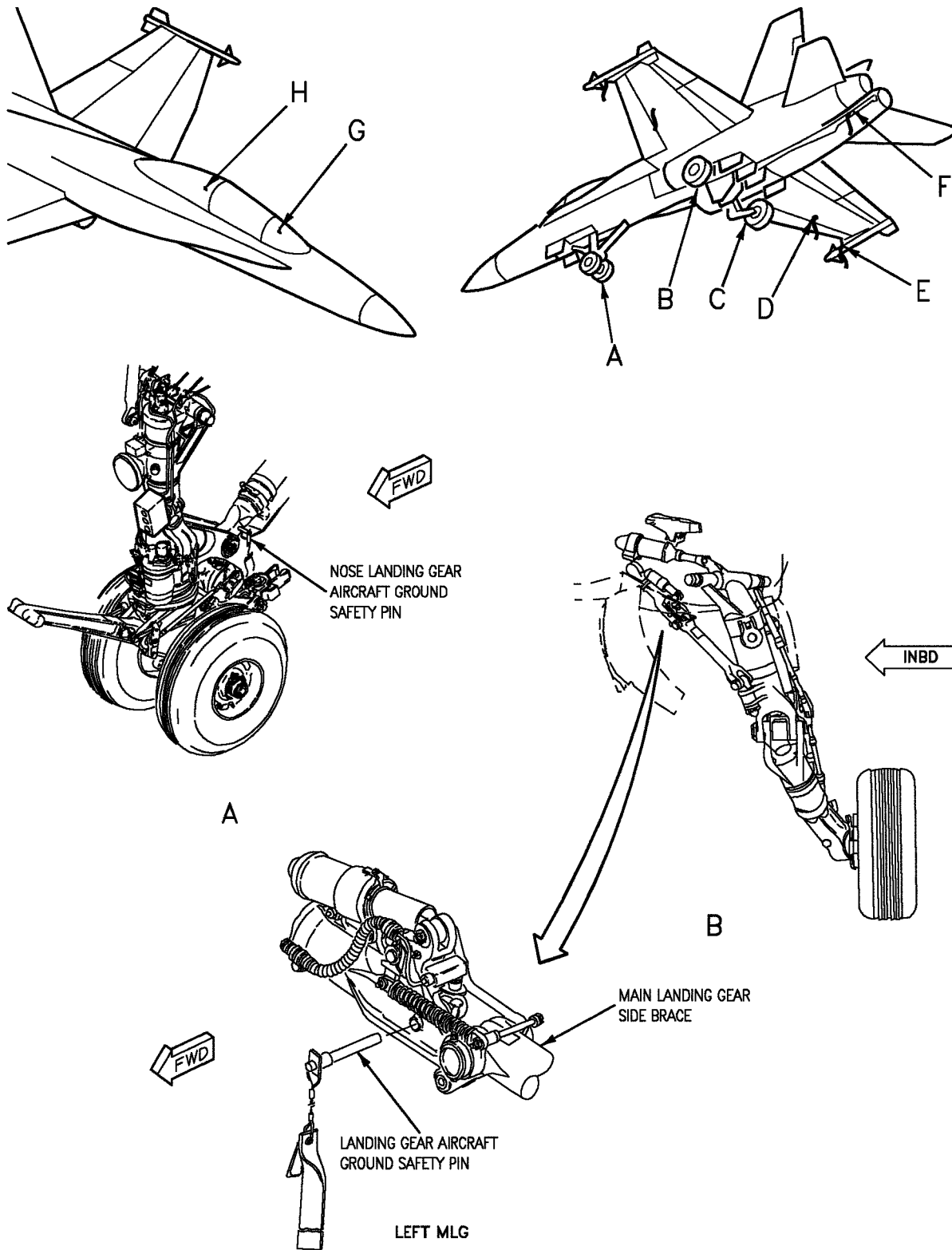


Figure 2-2. Ground Safety Devices (Sheet 1 of 3)

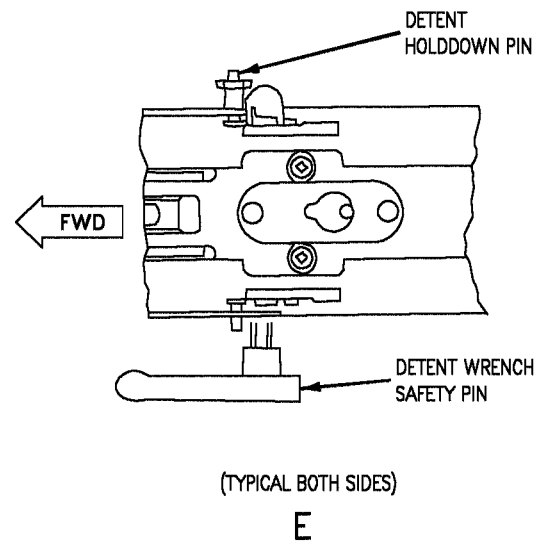
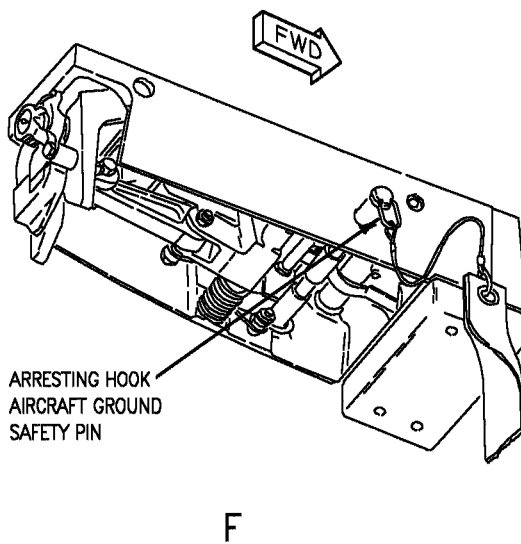
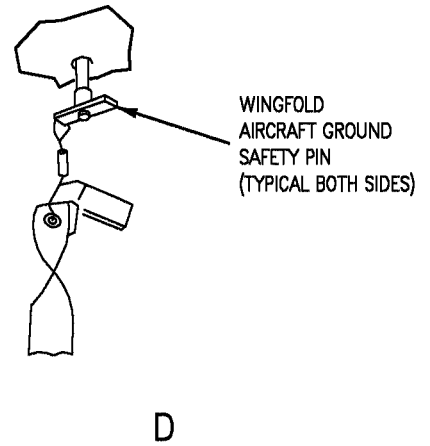
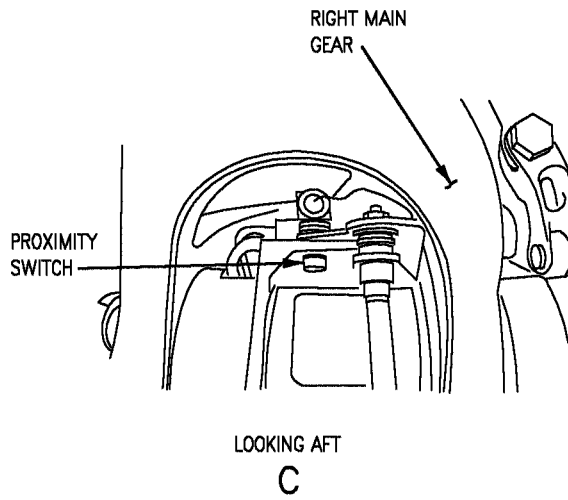


Figure 2-2. Ground Safety Devices (Sheet 2)

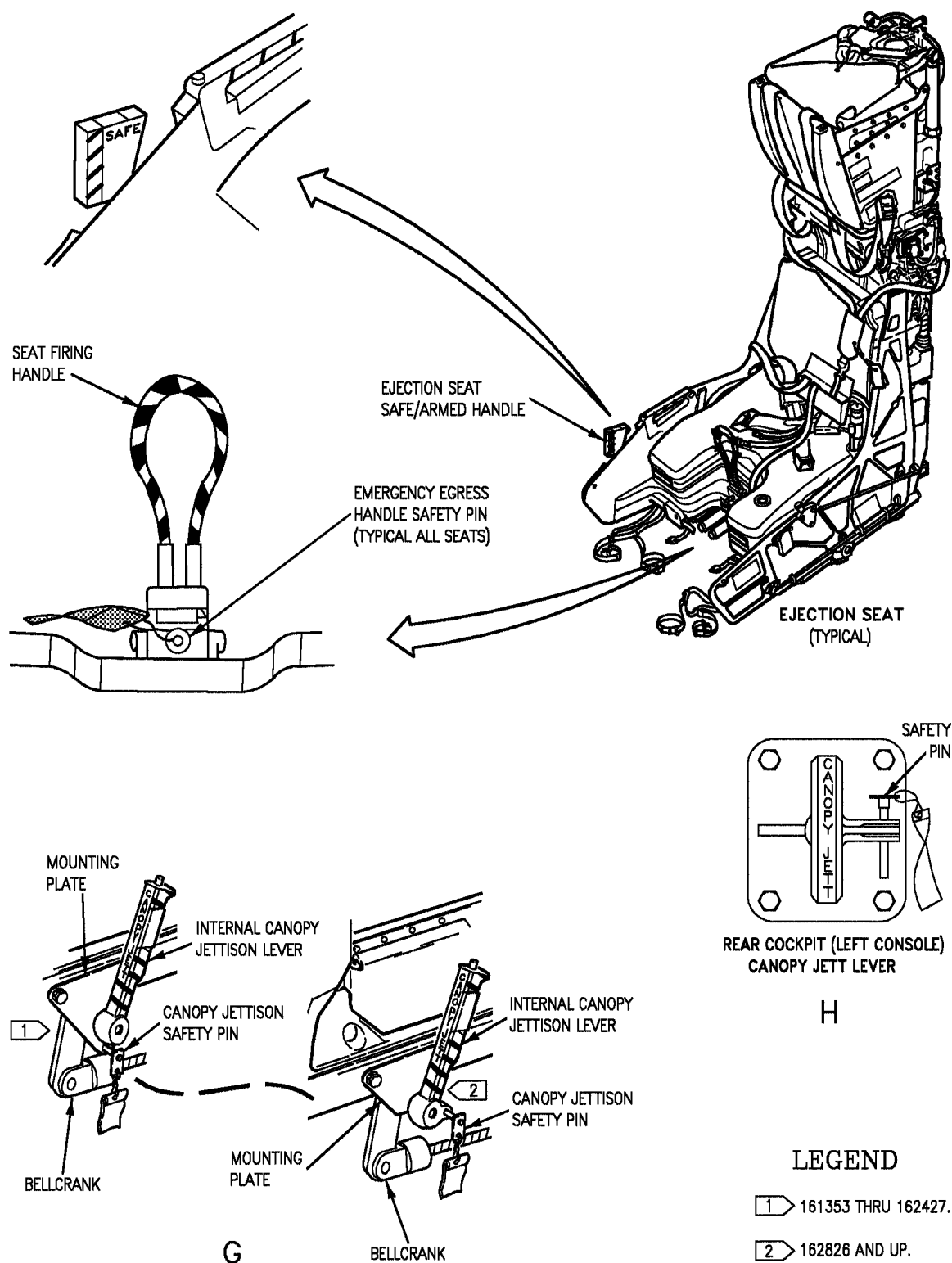


Figure 2-2. Ground Safety Devices (Sheet 3)

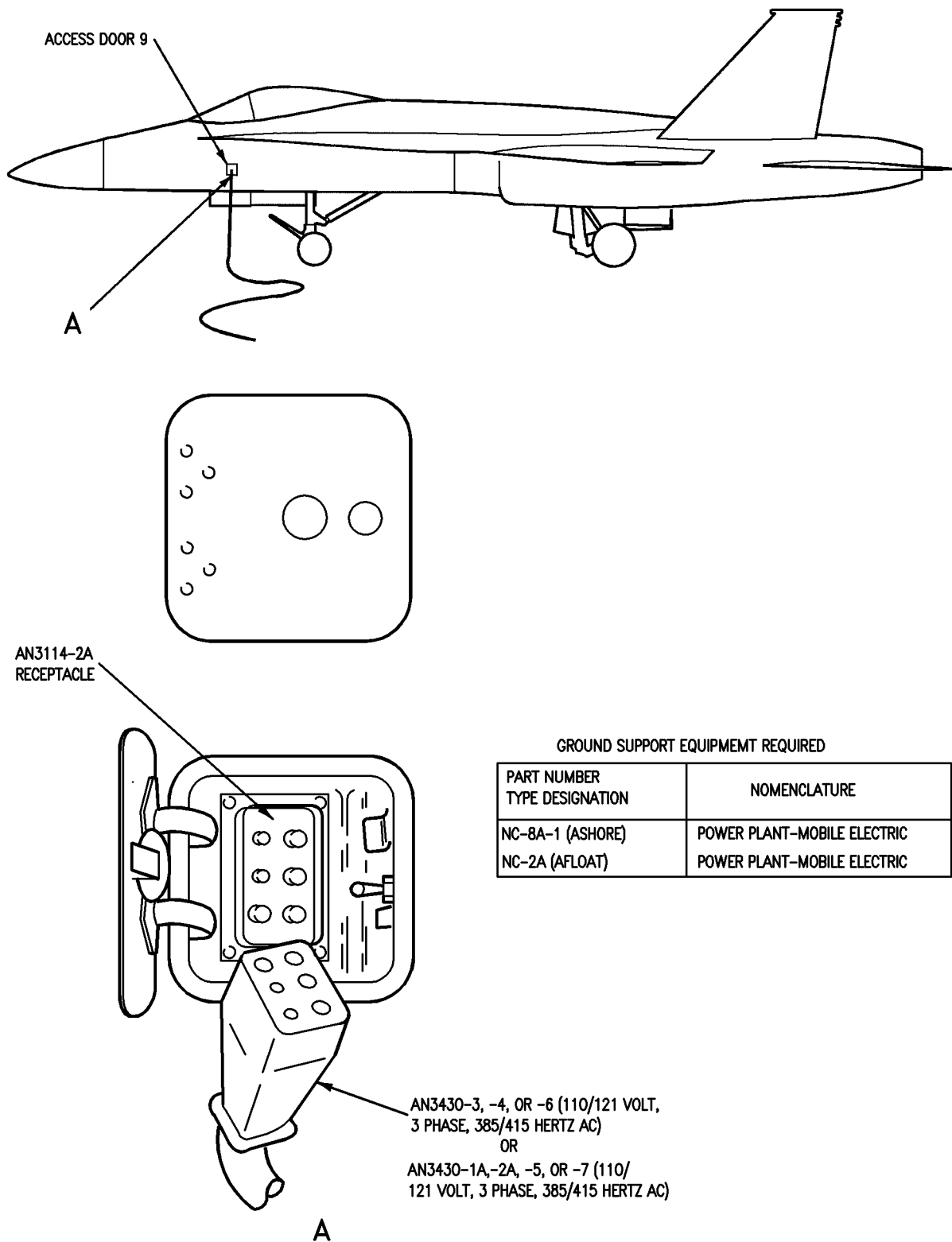


Figure 2-3. External Electric Power

**Description**

power to the ACbus. Protection of the aircraft electrical system powered from the aircraft buses is provided by circuit breakers. When external power is not utilized, the Auxiliary Power Unit (APU) can be utilized to drive either aircraft generator to allow functional checkout of the aircraft system.

2-8. Ground aircraft using authorized ground cable connected to an approved common static ground and attached to aircraft (Figure 2-4). The grounding cable must be attached to certified ground eyelet or a common static ground, then to an authorized ground point on the aircraft. Locations of the ground jacks are as follows:

1. Fuel/Defuel Receptacle - One ground jack.
2. Nose Landing Gear Wheelwell - One ground jack.
3. Main Landing Gear Wheelwell - Each well has two ground jacks.
4. Wing Pylons - One ground jack on the aft end of each pylon.
5. Arresting Hook - One ground jack on the lower surface of the hook fairing.

2-9. **EXTERNAL HYDRAULIC POWER.** External hydraulic power (Figure 2-5) is connected to the aircraft through panels on the bottom left and right sides of the fuselage. Hydraulic Power System No. 1 uses door 53L, and System No. 2 uses Door 53R.

2-10. **EXTERNAL COOLING AIR.** External cooling air (Figure 2-6) is required for ground cooling of electronic equipment compartments and aircraft cabin when ambient temperature is higher than 105°F.

**2-11. AIRCRAFT ARMAMENT SYSTEMS.**

2-12. The aircraft armament system consists of the following systems and subsystems, which provide the common circuits, basic controls, and components necessary to release weapons/stores or fire rockets and missiles. Effectivity of subsystems that are not common to all aircraft is indicated in the paragraphs describing the subsystem.

**2-13. COMPONENT DESCRIPTION AND LOCATION.**

2-14. The aircraft armament system consists of various basic controls and components that are common to all of the armament subsystems. Additional components and controls used in specific subsystems are contained in the subsystem description.

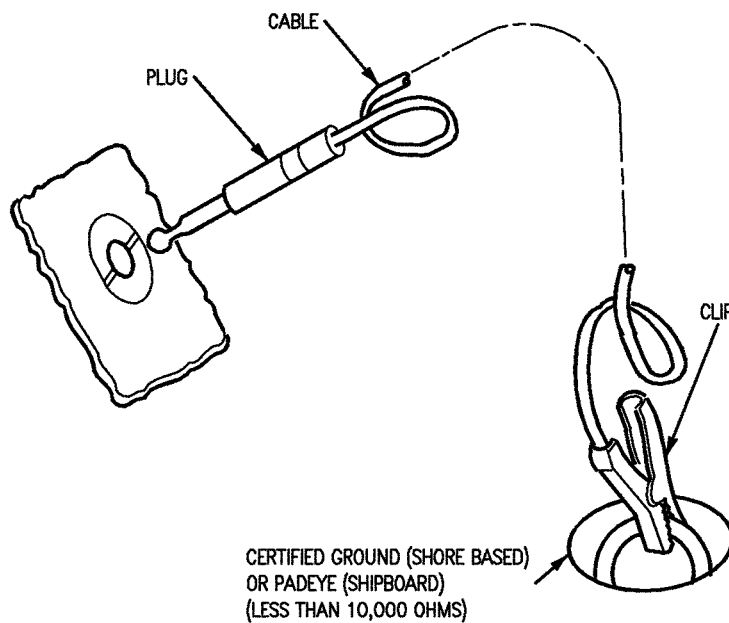
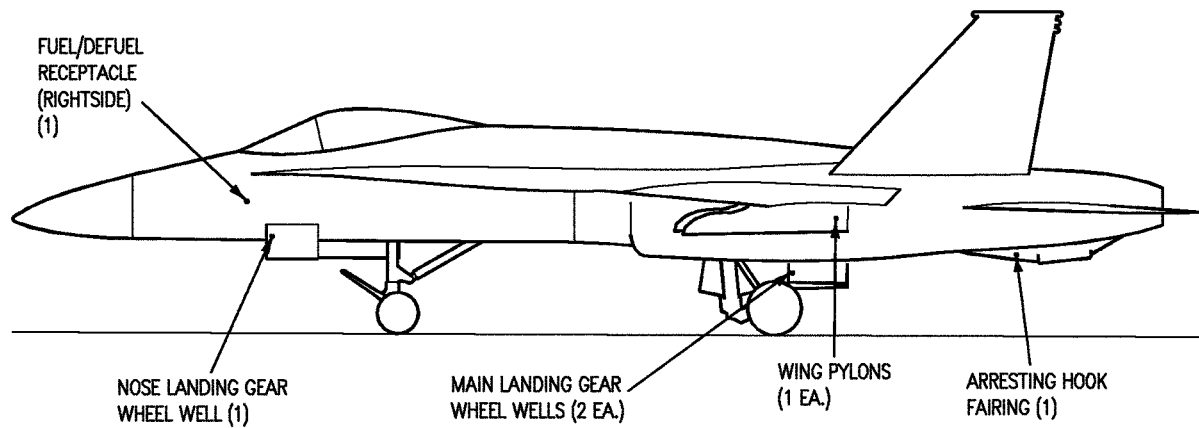
2-15. **ARMAMENT SYSTEM BASIC CONTROLS.** The F/A-18A-D aircraft contain the following armament system basic controls and components (Figure 2-7).

2-16. **LDG GEAR Handle.** Located on the pilot's lower left instrument panel, the landing gear control handle in the DN position disables normal weapon release, launch, and fire signals. In the UP position 28VDC is directed from the main landing gear weight off wheels relay to the master arm circuit breaker.

2-17. **ARMAMENT OVERRIDE Switch.** Located in the nose wheel well, the armament safety override switch in the OVERRIDE position provides a parallel path for master arm power for ground operations.

2-18. **Mission Computers.** Located in the left (13 Left) and right (14 Right) fuselage panels, Mission Computers 1 and 2 (respectively) are two digital data computers that make up the mission computer (MC)

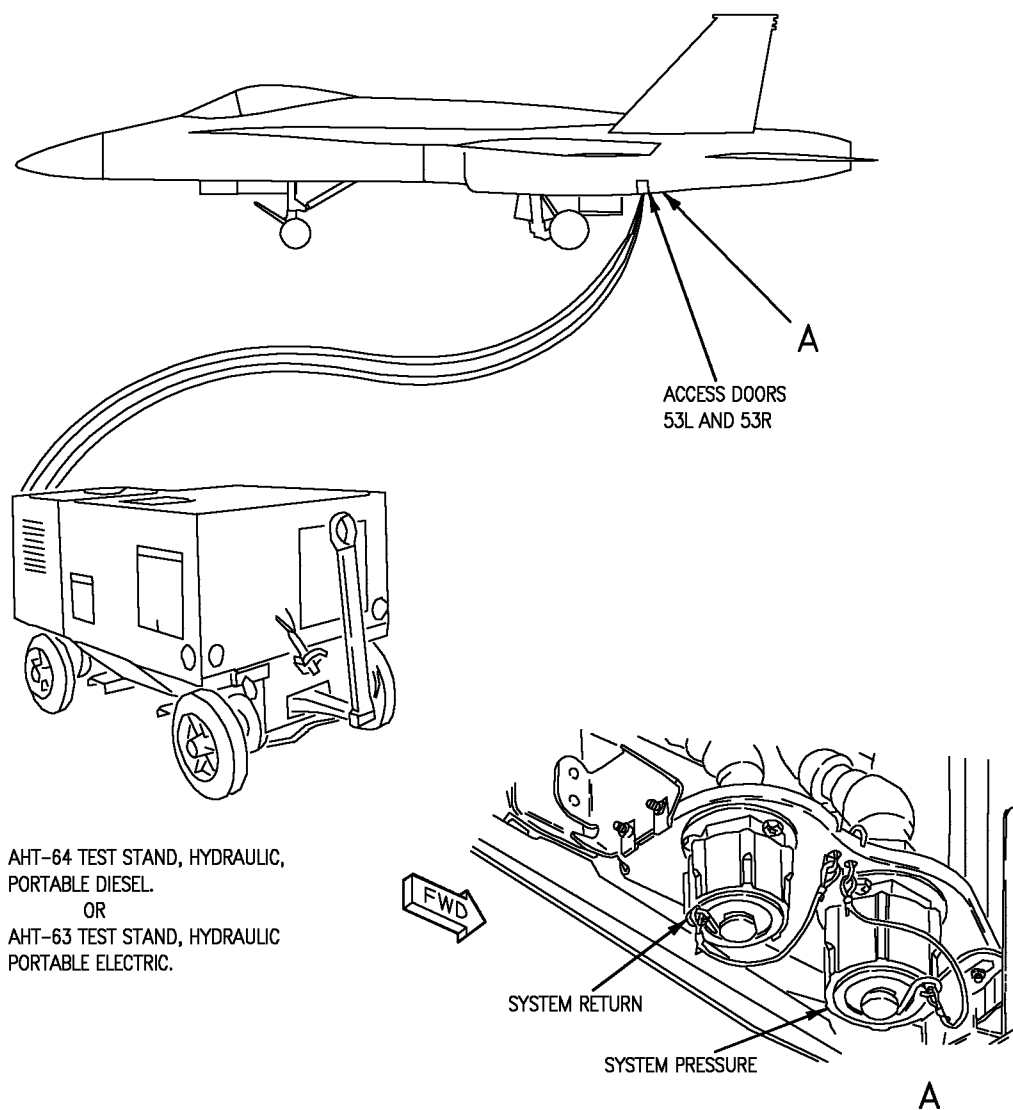




**CAUTION**  
EARTH GROUND POINT MUST BE  
FREE OF PAINT AND CORROSION.

Figure 2-4. Aircraft Grounding

Description



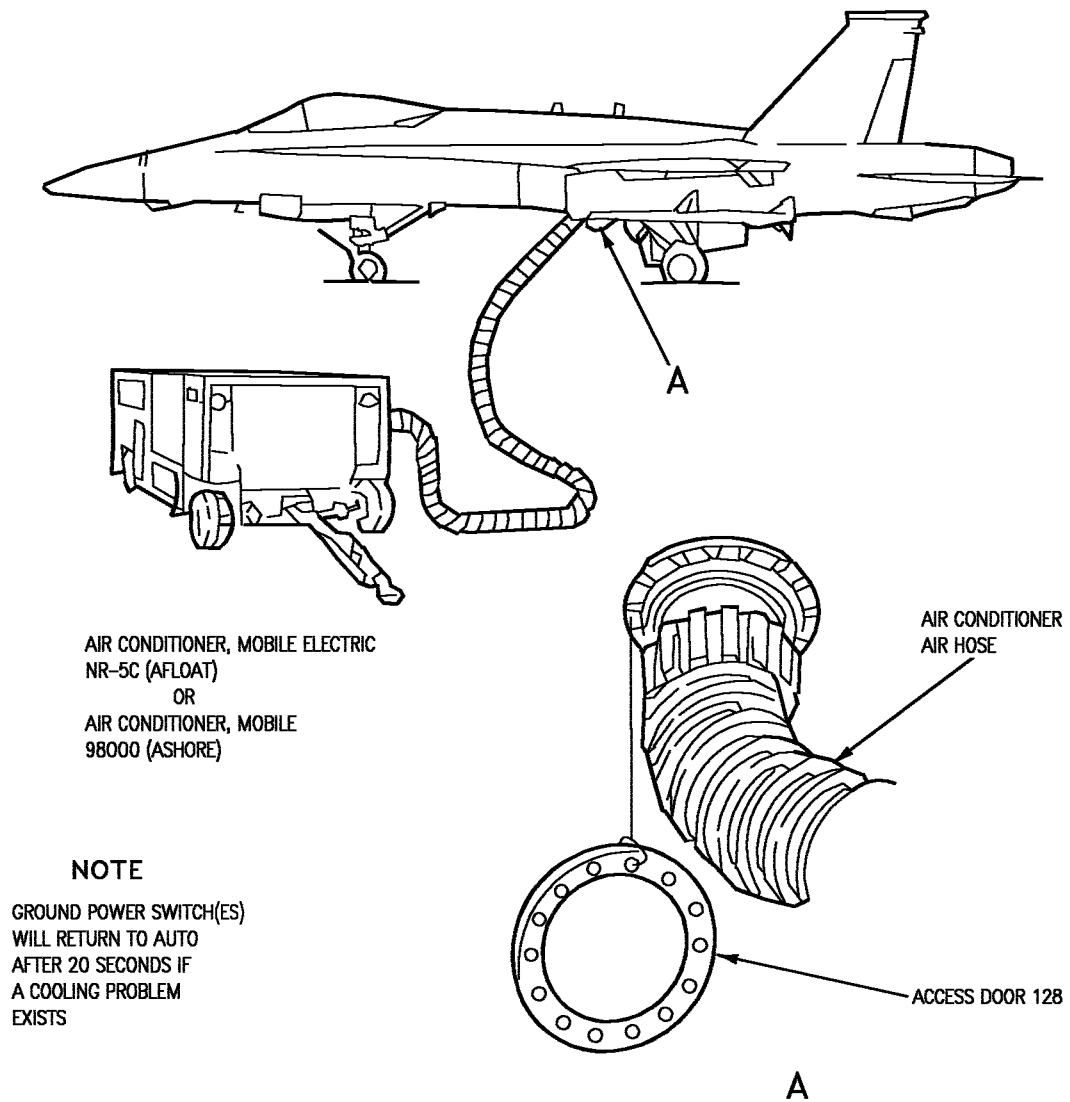
GROUND SUPPORT EQUIPMENT REQUIRED

PART NUMBER/ TYPE DESIGNATION	NOMENCLATURE
AHT-64 OR AHT-63 74D450004-1001 74D450005-1001	TEST STAND-PORTABLE HYDRAULIC LOCK-AIRCRAFT GROUND SAFETY, HYDRAULIC LOCK-AIRCRAFT GROUND SAFETY, RPS VALVE

NOTE

AHT-63 REQUIRES A SOURCE OF 220/440 VOLT, 3 PHASE, 60  
HERTZ AC POWER, 48 KVA MAXIMUM OPERATION DEMAND.

Figure 2-5. External Hydraulic Power

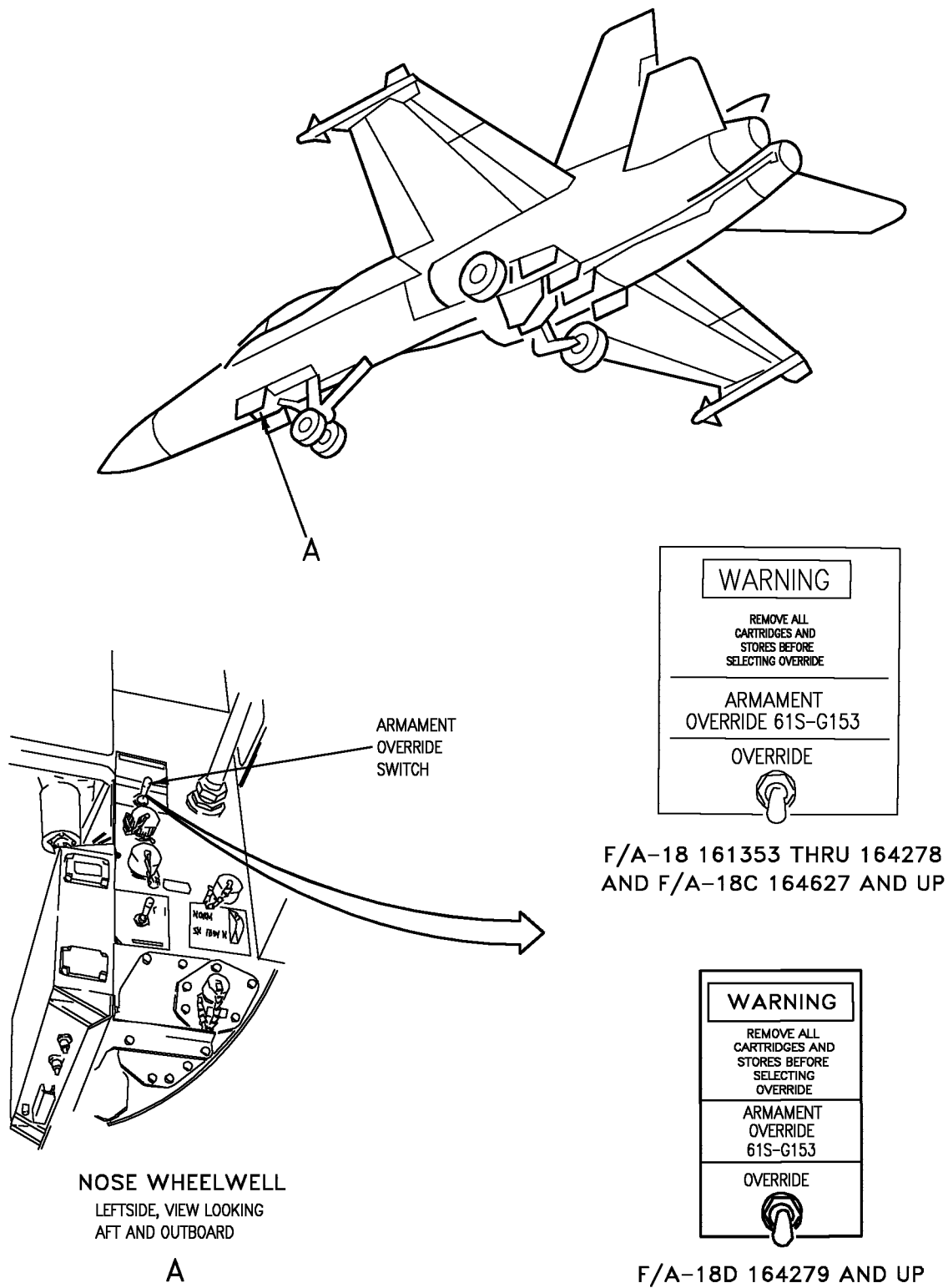


GROUND SUPPORT EQUIPMENT REQUIRED

PART NUMBER TYPE DESIGNATION	NOMENCLATURE
NR-5C 98000	AIR CONDITIONER, MOBILE ELECTRIC AIR CONDITIONER, MOBILE

Figure 2-6. External Cooling Air

**A1-F18AE-LWS-000**  
**Description**



**Figure 2-7. Armament System Basic Controls (Sheet 1 of 8)**

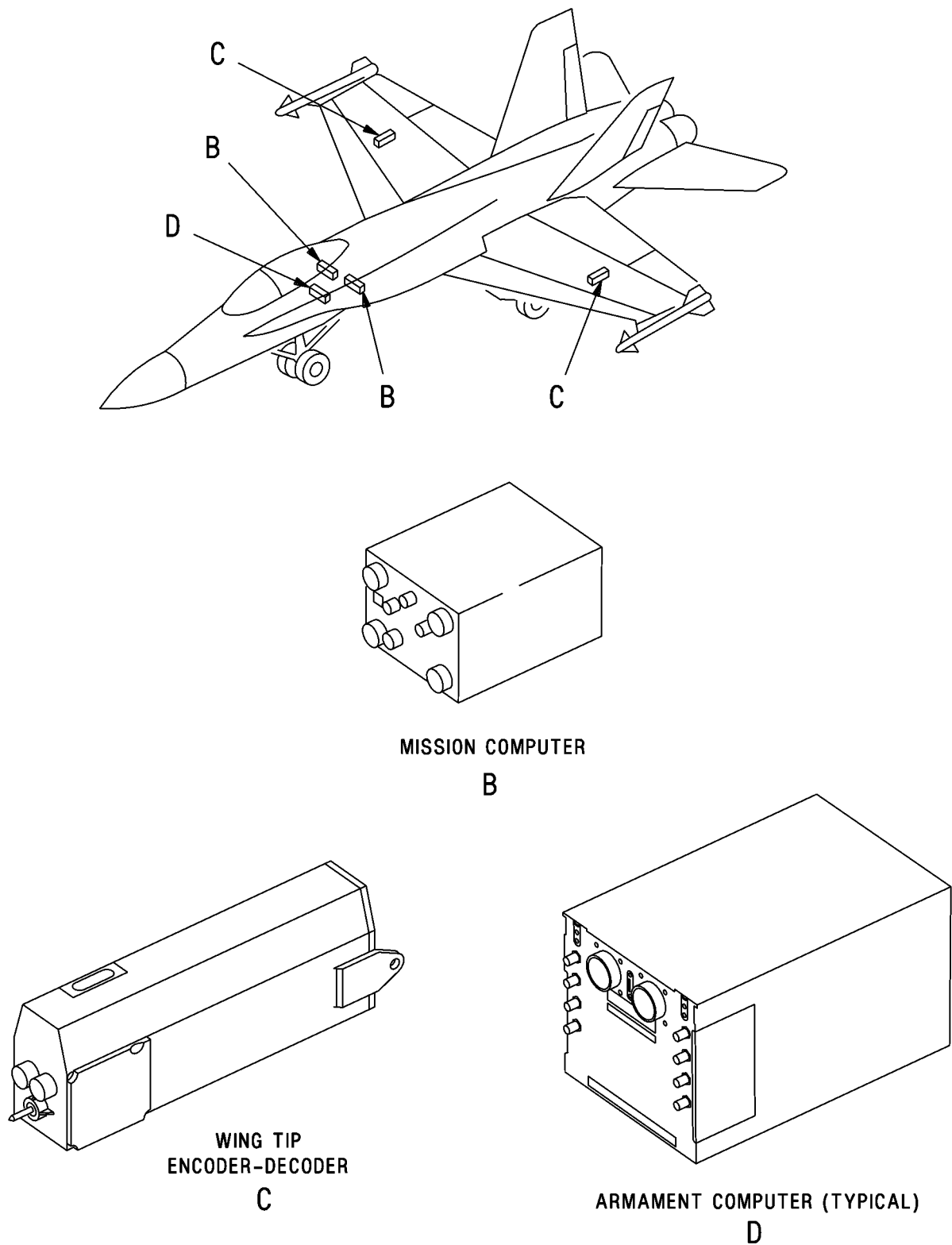
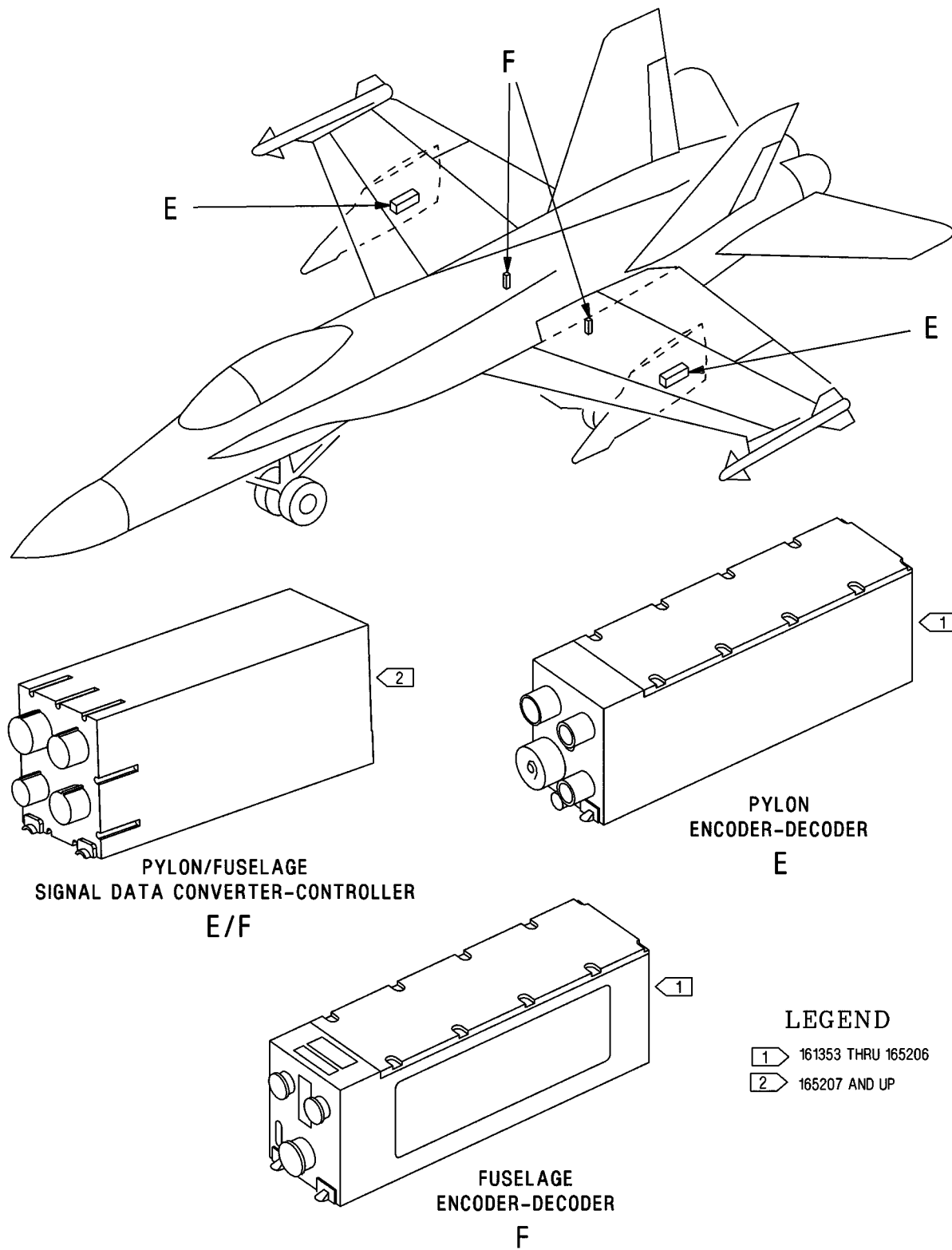
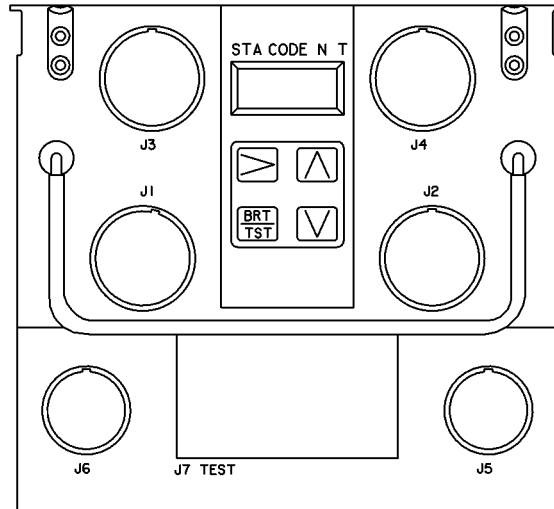


Figure 2-7. Armament System Basic Controls (Sheet 2)

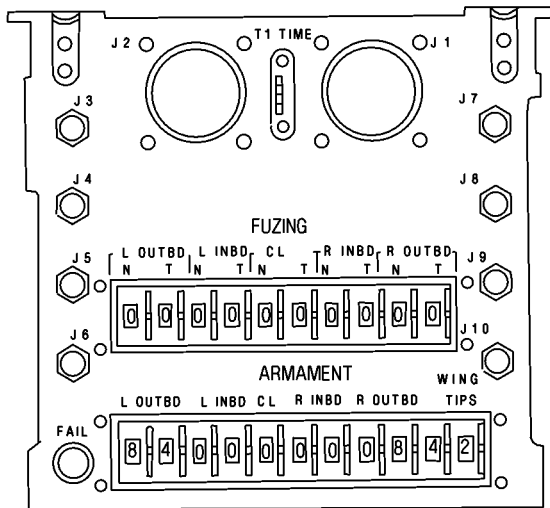
**A1-F18AE-LWS-000**  
**Description**



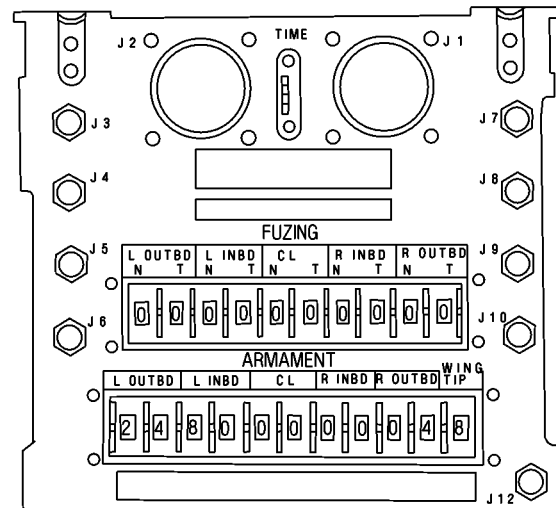
**Figure 2-7. Armament System Basic Controls (Sheet 3)**



165207 AND UP



161353 THRU 163175



163427 THRU 165206

# WEAPON INSERTION PANELS

Figure 2-7. Armament System Basic Controls (Sheet 4)

Description

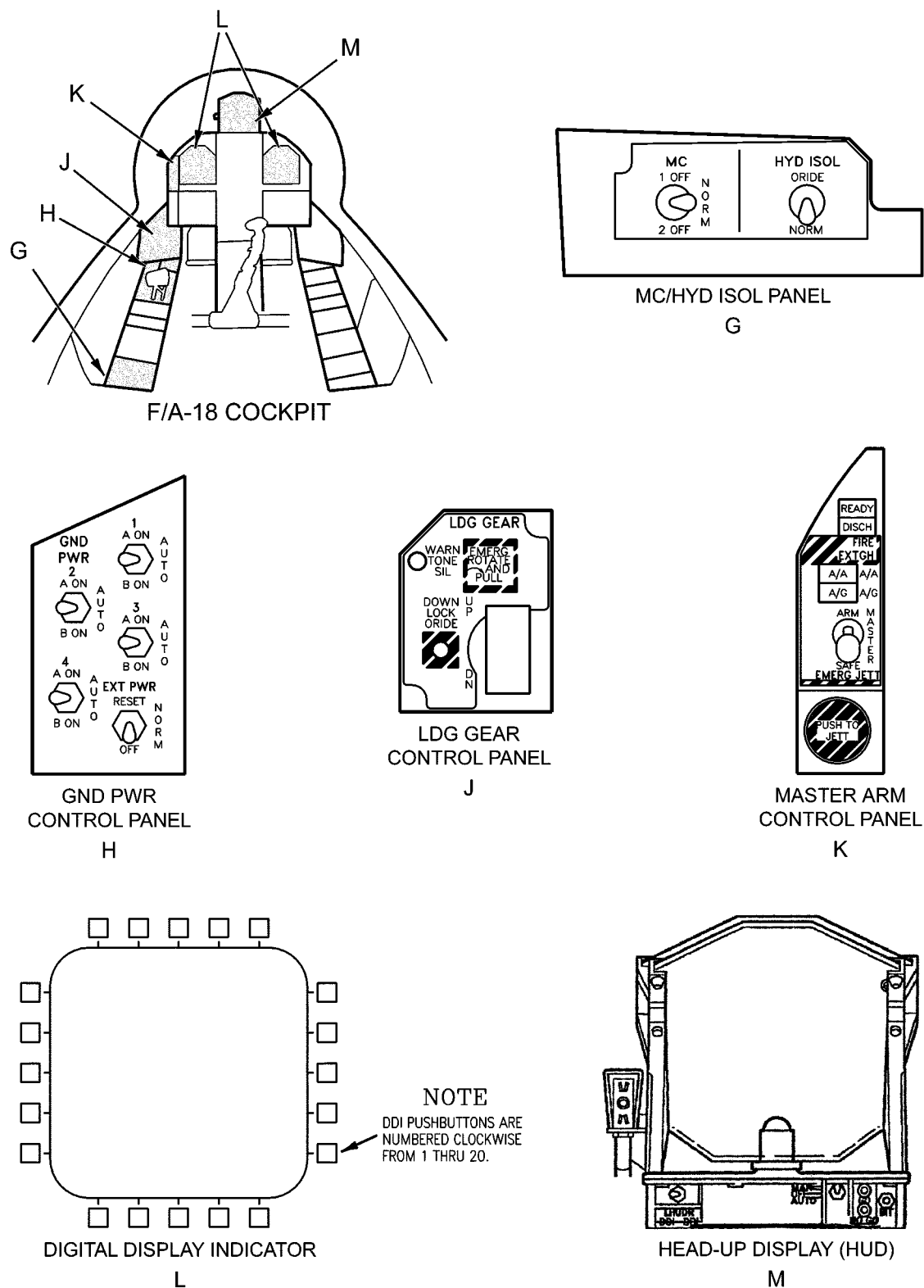


Figure 2-7. Armament System Basic Controls (Sheet 5)



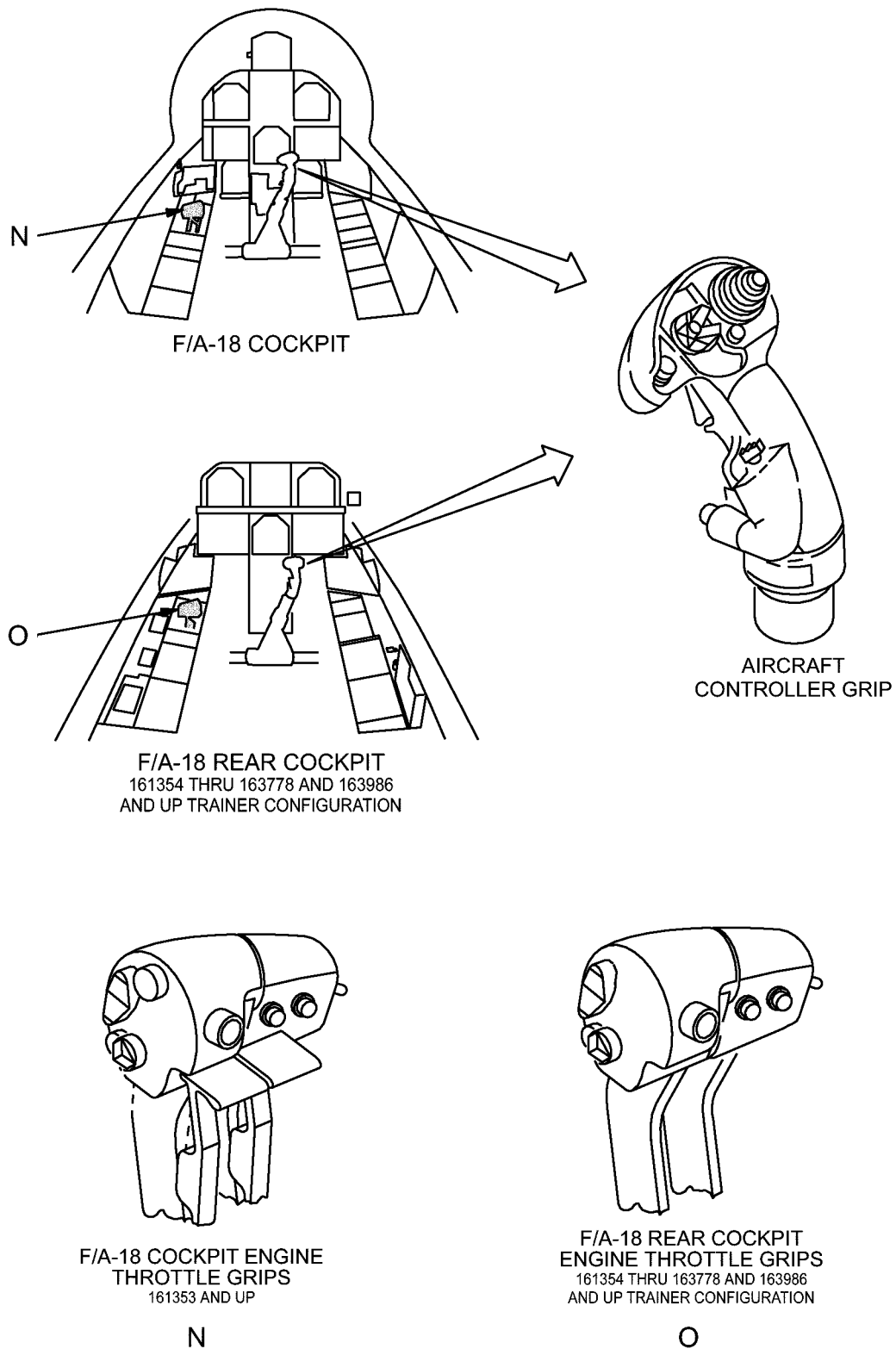
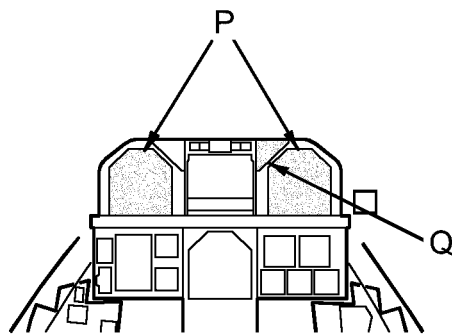
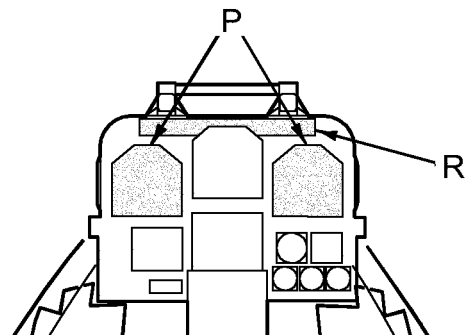


Figure 2-7. Armament System Basic Controls (Sheet 6)

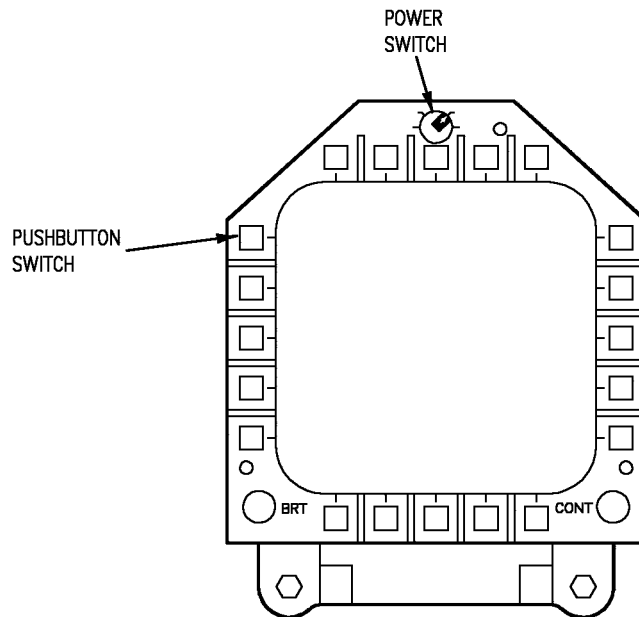
Description



REAR  
COCKPIT  
161354 THRU 163778

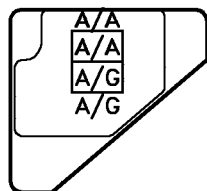


REAR  
COCKPIT  
163986 AND UP



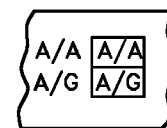
DIGITAL DISPLAY INDICATOR

P



MASTER MODE  
SELECT PANEL

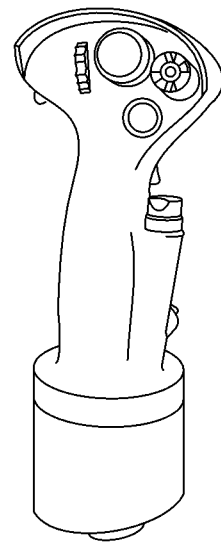
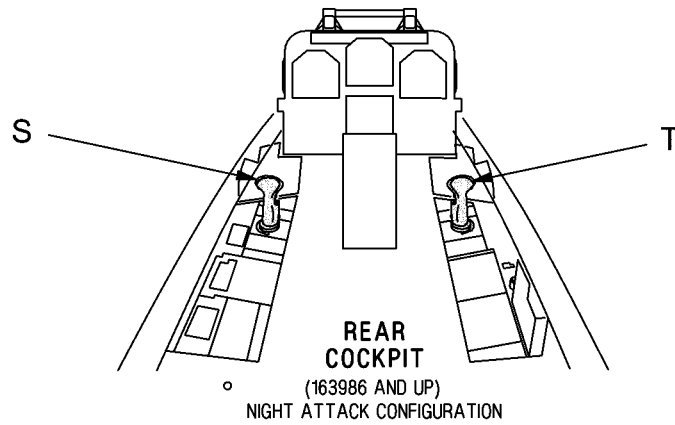
Q



REAR ADVISORY AND THREAT  
WARNING INDICATOR PANEL

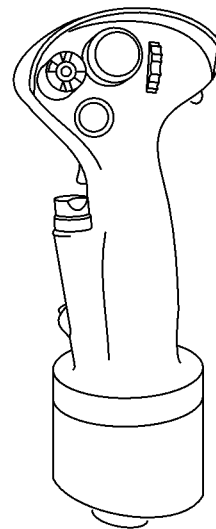
R

Figure 2-7. Armament System Basic Controls (Sheet 7)



LEFT HAND CONTROLLER

S



RIGHT HAND CONTROLLER

T

Figure 2-7. Armament System Basic Controls (Sheet 8)

**Description**

system and control the avionics systems. They interface with the armament computer and allow the armament computer to route power to the encoder/decoders for weapon release.

**2-19. Stores Management System (SMS).** The SMS provides for the interface, control, and release functions of the aircraft weapon stations and gun system. Two different SMS configurations exist: Stores Management Upgrade (SMUG) (F/A-18C/D aircraft, 165207 and up) and baseline, or Non-SMUG (F/A-18A/A+/B/C/D 161353 thru 165206). The SMS consists of various components and will be discussed in the following paragraphs:

**2-20. Armament Computer.** Located in the right (14 Right) fuselage panel, the armament computer is a digital computer that interfaces with and is controlled by the mission computers. The armament computer also interfaces with the weapon station command signal encoder-decoders (Non-SMUG) or signal data converter-controllers (SMUG). The armament computer contains a weapon insertion panel (WIP) for entering weapon and fuzing codes. On Non-SMUG computers, the WIP codes are entered by rotating the ARMAMENT and FUZING code switches. On SMUG computers, the WIP CODEs for STA and NT are entered with the WIP pushbutton switches.

**2-21. Command Signal Encoder-Decoders (Non-SMUG)/Signal Data Converter-Controllers (SMUG).** The encoder-decoders/signal data converter-controllers provide interface with the armament computer and weapons loaded, a weapon release path, and furnish weapon status to the armament computer. There are four pylon, two wing tip, two fuselage, and one gun encoder-decoder and four pylon and two fuselage signal data converter-controllers.

**2-22. Status Monitoring Subsystem (Built In Test (BIT)).** The status monitoring subsystem provides armament system BIT capability. There are three SMS BIT modes used for weapons system checkout. Two of the three modes are performed automatically. When a weapon replaceable assembly (WRA) fails a BIT test, the fail information is sent to the MC system and the BIT status is displayed on the Digital Display Indicators (DDIs). The three BIT modes are initial (power on) BIT, periodic BIT, and initiated BIT.

**2-23.** The initial or power-on BIT is performed when power is applied to the armament computer. During initial BIT, the armament computer performs an internal self-test. If the armament computer passes the self-test, it tests the encoder-decoders/signal data converters. When no weapon ident exists, all weapon circuits are tested except the command launch computer (CLC) will not be tested unless a weapon/tester ident and proper WIP code exists on F/A-18C/D aircraft.

**2-24.** Periodic BIT is the primary BIT mode. This test is automatically done every 60 seconds. During this test, the armament computer and encoder-decoders/signal data converters for stations with weapon ident are tested. Selecting the A/A or A/G master modes also starts periodic BIT, provided that A/A or A/G weapon indents exist. Periodic BIT is interrupted and the normal operating mode is resumed when the armament computer receives a program change or weapon release signal.

**2-25.** Initiated BIT is run only when selected and requires completion of initial (power on) BIT and selection of BIT display on the DDI. When initial (power on) BIT runs through completion, BIT status messages are displayed on the DDI. Initiating BIT commands the mission computer to send the initiated BIT command to the armament computer. The armament computer does the same BIT functions as the initial (power on) BIT but also has the ability to test the high current drivers in the encoder-decoders and the electric fuzing power supply, provided the MASTER switch is set to ARM and the ARMAMENT OVERRIDE switch set to OVERRIDE.

**2-26. PILOT COCKPIT ARMAMENT SYSTEM CONTROLS AND INDICATORS.** Additional armament system basic controls located in the pilot cockpit are described in the following paragraphs.

**2-27. GND PWR Control Panel.** Located on the pilot's left hand console, the ground power control panel controls power to the aircraft and systems. The panel contains five three-position switches. The EXT PWR

switch controls application of external power to the aircraft. The OFF position disables electrical power; the RESET position resets the external power monitoring circuits; and the NORM, or normal, position allows external power to be supplied to the aircraft after placing the switch to RESET. The 1, 2, 3, and 4 switches control application of power to aircraft systems preventing excessive equipment operating time because of other unassociated ground operations. The A and B ON positions apply power to selected systems; the AUTO position disables power to selected systems. Placing the EXT PWR switch to the OFF position returns all power control switches to AUTO.

2-28. **MC/HYD ISOL Panel.** Located on the pilot's left hand console, the Mission Computer/Hydraulic Isolation panel contains the MC switch. The MC switch is a three-position switch that controls power to the mission computers. The 1 OFF position disables MC1; the NORM, or normal, position enables both MC 1 and 2; and the 2 OFF position disables MC2.

2-29. **DDIs.** Located on the pilot's instrument panel, the DDIs allow for pilot interface with and display from the SMS and MC systems. The DDIs display the SMS wingform, which displays weapon type, quantity, priority, and status. They also provide selected weapon video and a means for weapon selection and moding and control and display of Built In Test (BIT) functionality. The DDI controls consist of the OFF, NIGHT, DAY, AUTO switch, used to apply power to the DDI under various lighting conditions, BRT switch to vary brightness of the display, and CONT switch to vary contrast of the display. Twenty pushbutton switches around the face of the DDI allow for selection of weapon modes and options, based on selected weapon type.

2-30. **HUD.** Located on the pilot's instrument panel, the Head Up Display allows for weapon displays. The OFF/BRT switch controls power and brightness of the HUD display.

2-31. **Master Arm Control Panel.** Located on the pilot's instrument panel, the Master Arm control panel allows for arming the armament systems, selecting air-to-air and air-to-ground master modes and emergency jettison of weapons and stores. The MASTER switch is a two-position switch. ARM enables arming and SAFE inhibits release, launch, or firing of the aircraft armament systems. The A/A switch is a pushbutton switch/indicator that selects air-to-air master mode. This mode allows for the selection, control, and launch of air intercept weapons and firing of the aircraft gun in air-to-air mode. Additionally, this mode commands the right DDI to display the air-to-air RADAR attack display. The A/G switch is a pushbutton switch/indicator that allows for selection, control, launch, and firing of air-to-ground weapons and the aircraft gun. Additionally, this mode commands the left DDI to display the stores wingform display. The EMERG JETT switch will be discussed in the jettison subsystem section.

2-32. **Aircraft Controller Grip.** Located on the pilot's control stick, the aircraft controller grip contains numerous switches for selection, launch, release, and firing of weapons in both air-to-air and air-to-ground modes and actuation of the HUD camera. The switches and their functions are provided in the applicable subsections.

2-33. **Engine Throttle Grips.** Located on the pilot's left hand console, the left and right throttle grips contain numerous switches for control of weapons in both air-to-air and air-to-ground modes and the dispensing of expendable payloads. The switches and their functions are provided in the applicable subsections.

2-34. **AFT COCKPIT ARMAMENT SYSTEM CONTROLS AND INDICATORS.** Additional armament system basic controls located in the aft cockpit are described in the following paragraphs.

2-35. **DDIs.** Located on the aft instrument panel, the DDIs perform the same functionality as those in the pilot cockpit. On aircraft 161354 thru 163778, the aft cockpit DDIs are connected in parallel with those in the pilot cockpit. On F/A-18D 163986 and up, the aft cockpit DDIs are independent displays.

**Description**

2-36. **Master Mode Select Panel/Rear Advisory and Threat Warning Panel.** Located on the aft cockpit instrument panel, the Master Mode Select Panel contains the A/A and A/G switches for F/A-18 161354 thru 163778. The Rear Advisory and Threat Warning Indicator Panel Assembly contains the A/A and A/G switches for F/A-18D 163986 and up. The Master Mode switches perform the same functionality as those in the pilot cockpit.

2-37. **Left/Right Hand Controllers.** Located in the aft cockpit on the left and right hand consoles, the left and right hand controllers contain numerous switches for control of weapons in air-to-ground mode and the dispensing of expendable payloads. The switches and their functions are provided in the applicable subsections.

2-38. **ARMAMENT SYSTEM CIRCUIT BREAKERS.** The weapon control system circuit breaker locations are located in Figure 2-8.

**2-39. OPERATIONAL DESCRIPTION OF ARMAMENT SUBSYSTEMS.**

2-40. The following paragraphs describe the aircraft armament subsystems and components.

2-41. **AIR-TO-AIR MISSILE CONTROL SYSTEMS.** The air-to-air missile control systems (Figure 2-9) provide for the ability to select and launch air-to-air missiles, including AIM-7 Sparrow, AIM-9 Sidewinder and AIM-120 AMRAAM. The air-to-air missile control system consists of the components described in Paragraph 2-15, which are common to all of the armament subsystems.

2-42. The following paragraphs describe additional controls and indicators of the air-to-air missile control system.

2-43. **A/A Weapon Select Switches.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit control sticks, the A/A weapon select switch is a four-position switch used to select air-to-air weapons and configure the right DDI to the RADAR attack display. The forward position selects AIM-7 Sparrow, pressing the switch down selects AIM-9 Sidewinder and pressing the switch to the right selects AIM-120 AMRAAM.

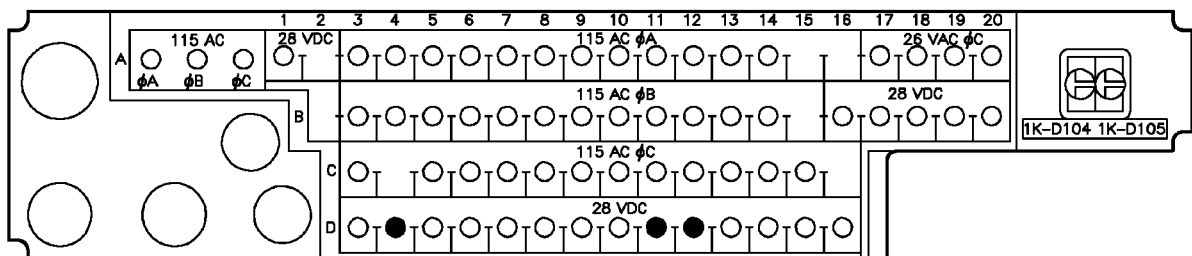
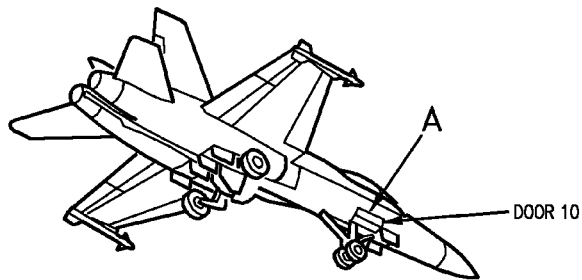
2-44. **A/A Missile Trigger Switch.** Located on the pilot's control stick, the A/A missile trigger switch is a two-position switch. The first detent initiates actuation of the HUD camera. The second detent initiates launch of selected air-to-air missiles.

2-45. **Infrared (IR) COOL Switch.** Located on the MAP GAIN control panel on the pilot's instrument panel, the IR COOL switch is a three-position switch that controls cooling to AIM-9 Sidewinder seeker heads. The OFF position disables coolant to the seeker heads unless weight is off wheels. MASTER switch is in the ARM position, and a station is selected. The NORM position applies coolant to all seeker heads when weight is off wheels. The ORIDE position applies coolant to all seeker heads when power is applied to the aircraft.

2-46. **WPN Volume Control.** Located on the Intercommunication Amplifier-Control on the pilot's left hand console and the Volume Control Panel on the aft cockpit left hand console, the weapon volume control switch controls AIM-9 Sidewinder tone volume.

2-47. **RADAR Control Switch.** Located on the SNSR (sensor) control panel on the pilot's right hand console, the RADAR switch controls power to the RADAR system. The RADAR system is used to control AIM-7 Sparrow and AIM-120 AMRAAM missiles.

2-48. Air-to-air missiles are selected with the A/A weapon select switch. At that time, all air-to-air launchers are unlocked and the right DDI is commanded to the RADAR attack display. Provided the selected weapon is



52A-D024

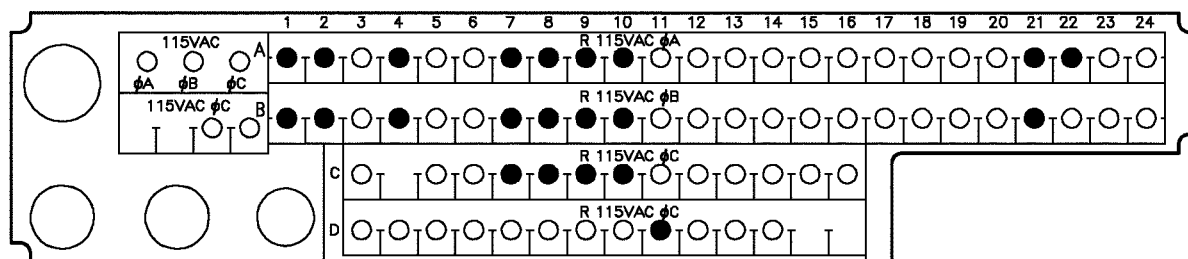
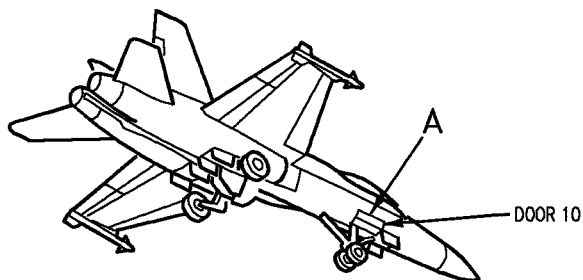
161353 THRU 161359

A

52A-D024		NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY	
ZONE	REF DES	NOMENCLATURE	BUS
D4	28CBD007	PROBE HTR CONT	28VDC
D11	65CBD025	AN/ALE 39 CONT	R 28VDC
D12	65CBD024	AN/ALE 39 PWR	R 2VDC

Figure 2-8. Armament System Circuit Breakers (Sheet 1 of 9)

## Description



52A-D024

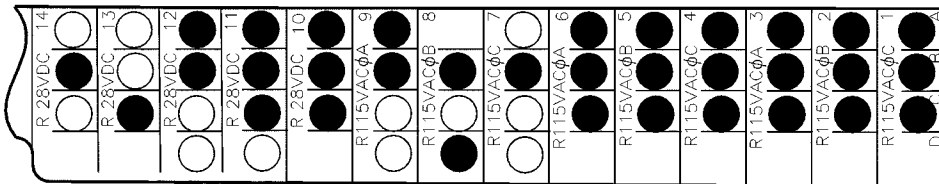
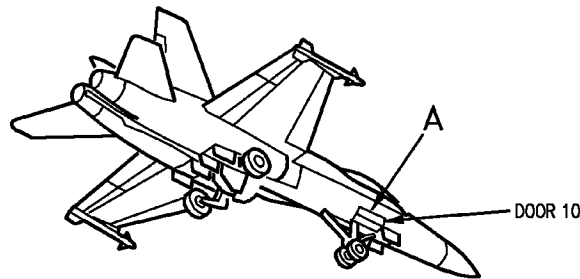
161360 AND UP

A

52A-D024		NO. 2 CIRCUIT BREAKER PANEL ASSEMBLY	
ZONE	REF DES	NOMENCLATURE	BUS
A1	61CBD080	ARM STA 8	R 115VACφA
A2	61CBD156	AMAC	R 115VACφA
A4	28CBD004	R AOA P HTR	R 115VACφA
A7	61CBD068	ARM STA 5	R 115VACφA
A8	61CBD072	ARM STA 6	R 115VACφA
A9	61CBD076	ARM STA 7	R 115VACφA
A10	61CBD087	HARM	R 115VACφA
A21	61CBD003	SMS	R 115VACφA
A22	61CBD084	ARM STA 9	R 115VACφA
B-	61CBD158	AMAC	R 115VACφB
B-	61CBD082	ARM STA 8	R 115VACφC
B1	61CBD081	ARM STA 8	R 115VACφB
B2	61CBD157	AMAC	R 115VACφB
B4	28CBD002	R PITOT P HTR	R 115VACφB
B7	61CBD069	ARM STA 5	R 115VACφB
B8	61CBD073	ARM STA 6	R 115VACφB
B9	61CBD077	ARM STA 7	R 115VACφB
B10	61CBD088	HARM	R 115VACφB
B21	61CBD004	SMS	R 115VACφB
C7	61CBD070	ARM STA 5	R 115VACφC
C8	61CBD074	ARM STA 6	R 115VACφC
C9	61CBD078	ARM STA 7	R 115VACφC
C10	61CBD089	HARM	R 115VACφC
D11	61CBD005	SMS	R 115VACφC

Figure 2-8. Armament System Circuit Breakers (Sheet 2)



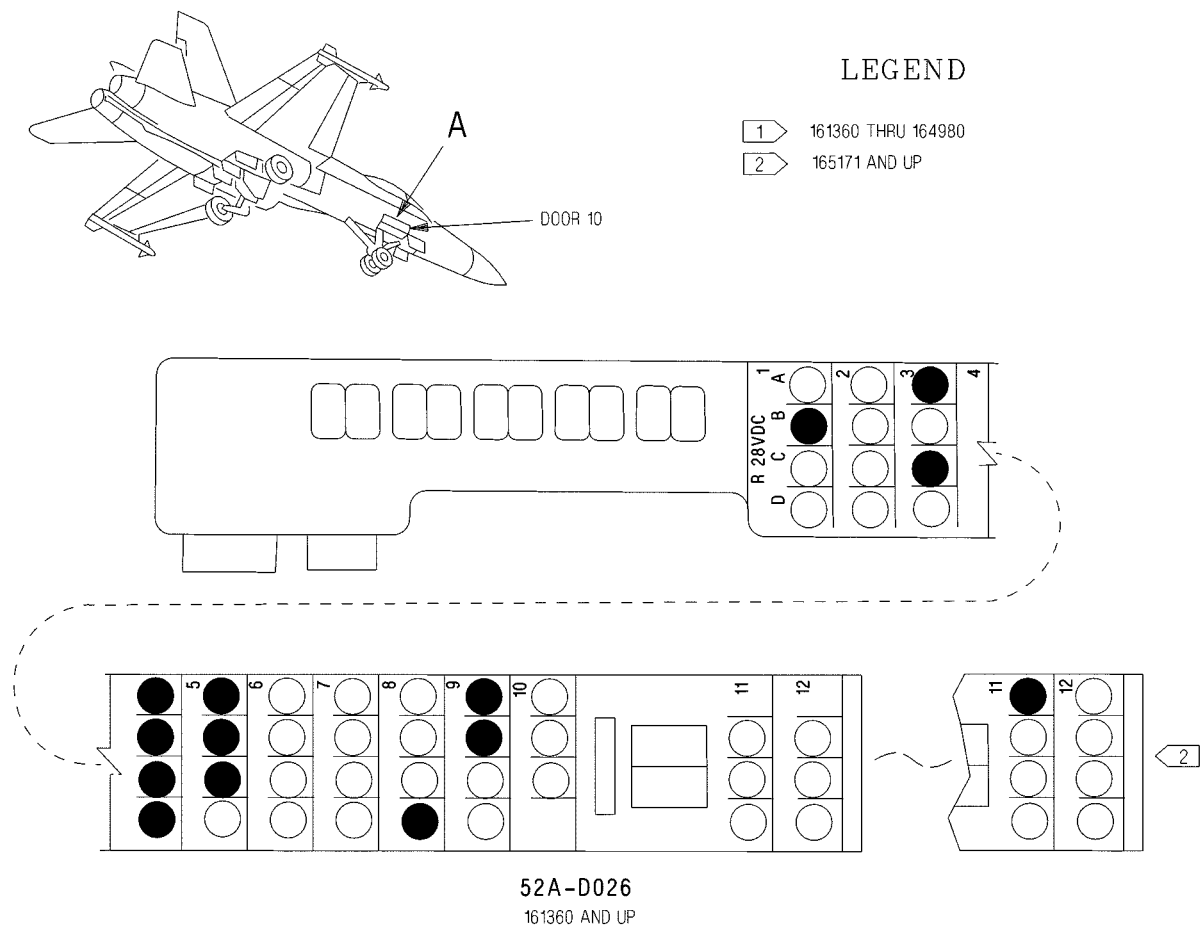


**52A-D026**  
 161353 THRU 161359

52A-D026 NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A1	61CBD082	ARM STA 8	R 115VACφC
A2	61CBD081	ARM STA 8	R 115VACφB
A3	61CBD080	ARM STA 8	R 115VACφA
A4	61CBD070	ARM STA 5	R 115VACφC
A5	61CBD069	ARM STA 5	R 115VACφB
A6	61CBD068	ARM STA 5	R 115VACφA
A9	61CBD084	ARM STA 9	R 115VACφA
A10	61CBD079	ARM STA 8	R 28VDC
A11	61CBD067	ARM STA 5	R 28VDC
A12	61CBD149	STA 8 LAU-118	R 28VDC
B1	61CBD158	AMAC	R 115VACφC
B2	61CBD157	AMAC	R 115VACφB
B3	61CBD156	AMAC	R 115VACφA
B4	61CBD074	ARM STA 6	R 115VACφC
B5	61CBD073	ARM STA 6	R 115VACφB
B6	61CBD072	ARM STA 6	R 115VACφA
B7	61CBD005	SMS	R 115VACφC
B8	61CBD004	SMS	R 115VACφB
B9	61CBD003	SMS	R 115VACφA
B10	61CBD159	AMAC	R 28VDC
B11	61CBD071	ARM STA 6	R 28VDC
B12	61CBD006	SMS	R 28VDC
B14	61CBD083	ARM STA 9	R 28VDC
C1	61CBD089	HARM	R 115VACφC
C2	61CBD088	HARM	R 115VACφB
C3	61CBD087	HARM	R 115VACφA
C4	61CBD078	ARM STA 7	R 115VACφC
C5	61CBD077	ARM STA 7	R 115VACφB
C6	61CBD076	ARM STA 7	R 115VACφA
C10	61CBD090	HARM	R 28VDC
C11	61CBD075	ARM STA 7	R 28VDC
C13	61CBD146	STA 7 LAU-118	R 28VDC
D8	70CBD006	ADC	R 115VACφB

**Figure 2-8. Armament System Circuit Breakers (Sheet 3)**

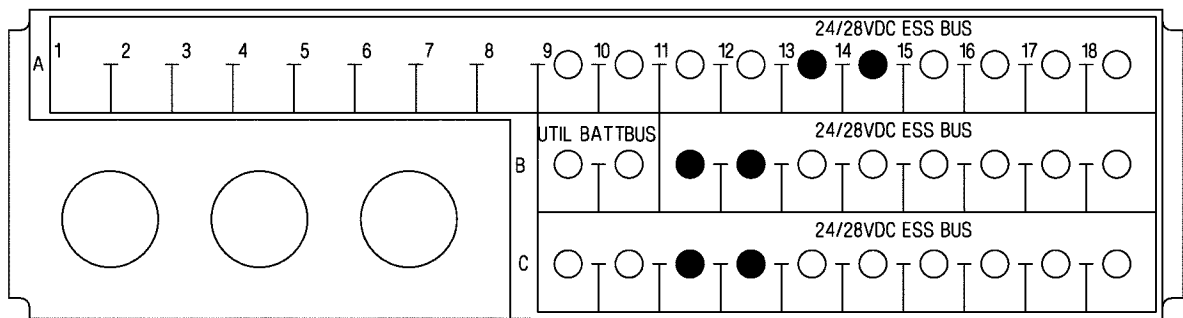
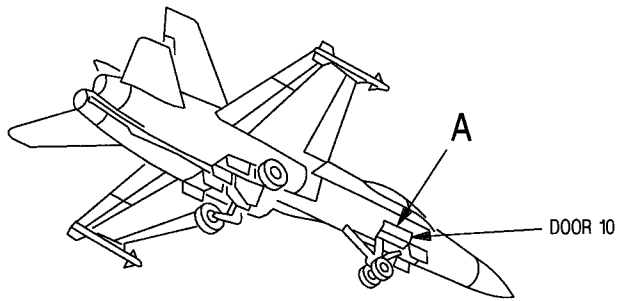
A1-F18AE-LWS-000  
Description



A

52A-D026		NO. 4 CIRCUIT BREAKER PANEL ASSEMBLY		
ZONE		REF DES	NOMENCLATURE	BUS
1	A3	61CBD006	SMS	R 28VDC
	A4	61CBD067	ARM STA 5	R 28VDC
	A5	61CBD079	ARM STA 8	R 28VDC
	A9	65CBD025	AN/ALE-39 CONT	R 28VDC
2	A9	65CBD025	AN/ALE-47 CONT	R 28VDC
	A11	65CBD043	AN/ALE-47 PWR-2	R 28VDC
1	B1	61CBD083	ARM STA 9	R 28VDC
	B4	61CBD071	ARM STA 6	R 28VDC
	B5	61CBD159	AMAC	R 28VDC
	B9	65CBD024	AN/ALE-39 PWR	R 28VDC
2	B9	65CBD024	AN/ALE-47 PWR-1	R 28VDC
	C3	61CBD149	ARM STA 8 28 VDC-1	R 28VDC
1	C4	61CBD075	ARM STA 7	R 28VDC
	C5	61CBD090	HARM	R 28VDC
	D4	61CBD146	ARM STA 7 28 VDC-1	R 28VDC
	D8	28CBD007	PROBE HTR CONT	R 28VDC

Figure 2-8. Armament System Circuit Breakers (Sheet 4)



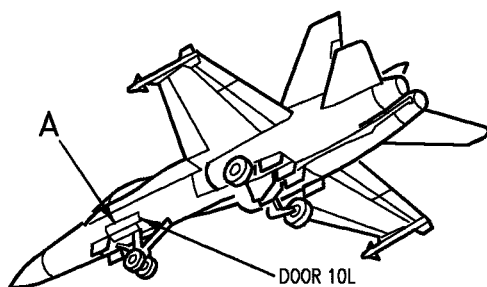
**52A-D092**  
 161353 THRU 165206

**A**

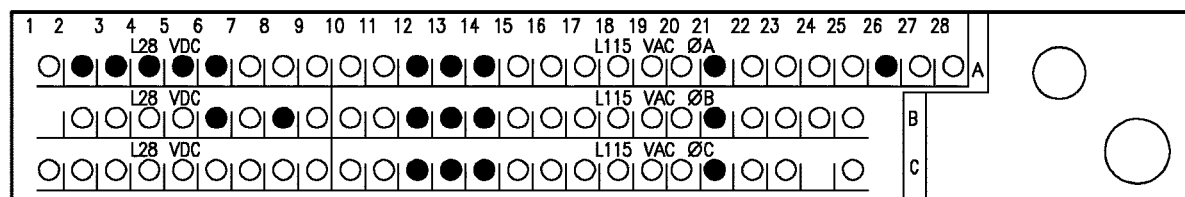
52A-D092 NO. 5 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A13	61CBD135	ARM STA 8	ESS 24/28VDC
A14	61CBD002	SMS	ESS 24/28VDC
B11	61CBD136	ARM STA 6	ESS 24/28VDC
B12	61CBD134	ARM STA 7	ESS 24/28VDC
C11	61CBD130	ARM STA 2	ESS 24/28VDC
C12	61CBD131	ARM STA 3	ESS 24/28VDC

**Figure 2-8. Armament System Circuit Breakers (Sheet 5)**

## Description



161353 THRU 161528; ALSO  
161702 THRU 161987 BEFORE AFC 74

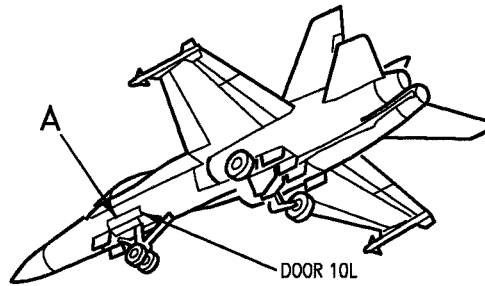


52A-C057

A

52A-C057 NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
A2	61CBC051	ARM STA 1	L 28VDC
A3	61CBC055	ARM STA 2	L 28VDC
A4	61CBC059	ARM STA 3	L 28VDC
A5	61CBC063	ARM STA 4	L 28VDC
A6	61CBC154	MASTER ARM	L 28VDC
A12	61CBC056	ARM STA 2	L 115VACØA
A13	61CBC060	ARM STA 3	L 115VACØA
A14	61CBC064	ARM STA 4	L 115VACØA
A21	28CBC003	L AOA PROBE HTR	L 115VACØA
A26	61CBC052	ARM STA 1	L 115VACØA
B6	1CBC048	GND PWR CONT	L 28VDC
B8	61CBC144	STA 3 LAU-118	L 28VDC
B12	61CBC057	ARM STA 2	L 115VACØB
B13	61CBC061	ARM STA 3	L 115VACØB
B14	61CBC065	ARM STA 4	L 115VACØB
B21	28CBC001	L PITOT PROBE HTR	L 115VACØB
C12	61CBC058	ARM STA 2	L 115VACØC
C13	61CBC062	ARM STA 3	L 115VACØC
C14	61CBC066	ARM STA 4	L 115VACØC
C21	28CBC005	TOT TEMP SENS P HTR	L 115VACØC

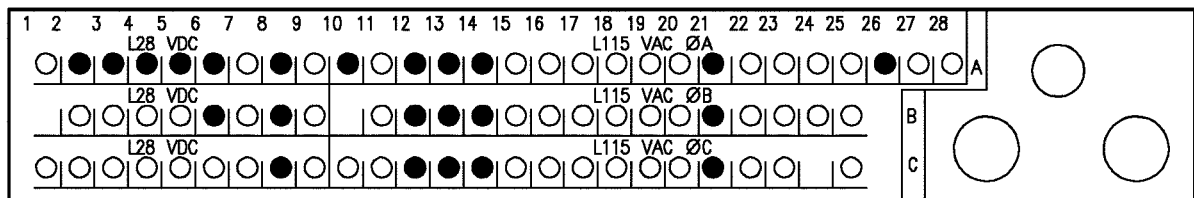
Figure 2-8. Armament System Circuit Breakers (Sheet 6)



LEGEND

- 1 163427 THRU 163782  
2 163995 AND UP

162394 AND UP; ALSO  
161702 THRU 161987 AFTER AFC 74



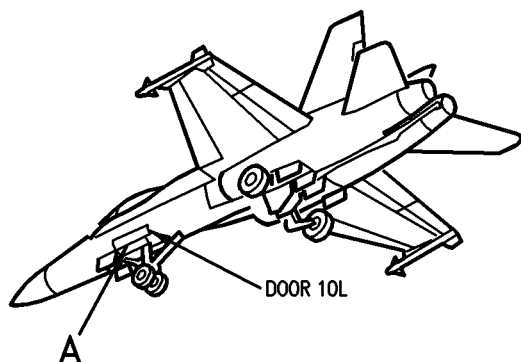
52A-C057

A

52A-C057		NO. 7 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY	
ZONE	REF DES	NOMENCLATURE	BUS
1	A2	61CBC051	ARM STA 1
	A3	61CBC055	ARM STA 2
	A4	61CBC059	ARM STA 3
	A5	61CBC063	ARM STA 4
	A6	61CBC154	MASTER ARM
	A8	61CBC145	ARM STA 2 28 VDC
	A10	61CBC179	ARM STA 4#1
	A12	61CBC056	ARM STA 2
	A13	61CBC060	ARM STA 3
	A14	61CBC064	ARM STA 4
2	A21	28CBC003	L AQA PROBE HTR
	A26	61CBC052	ARM STA 1
	B6	1CBC048	GND PWR CONT
	B8	61CBC144	STA 3 LAU-118
	B12	61CBC057	ARM STA 2
	B13	61CBC061	ARM STA 3
	B14	61CBC065	ARM STA 4
	B21	28CBC001	L PITOT PROBE HTR
	C8	61CBC179	ARM STA 4#1
	C12	61CBC058	ARM STA 2
	C13	61CBC062	ARM STA 3
	C14	61CBC066	ARM STA 4
	C21	28CBC005	TOT TEMP SENS P HTR
			L 28VDC
			L 28VDC
			L 28VDC
			L 28VDC
			L 28VDC
			L 28VDC
			L 115VACØA
			L 115VACØA
			L 115VACØA
			L 115VACØA
			L 115VACØA
			L 115VACØA
			L 28VDC
			L 28VDC
			L 115VACØB
			L 115VACØB
			L 115VACØB
			L 115VACØB
			L 115VACØB
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			L 115VACØC
			L 115VACØC

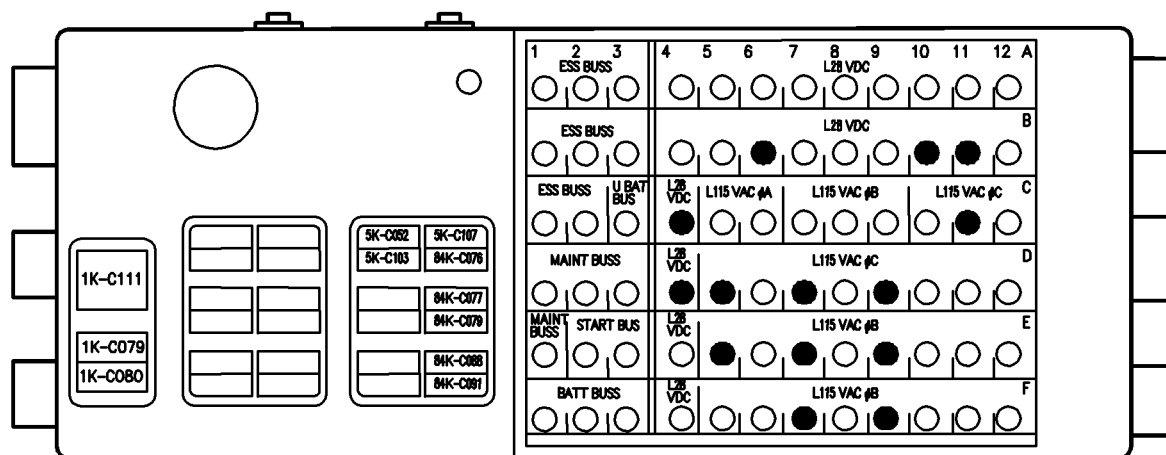
Figure 2-8. Armament System Circuit Breakers (Sheet 7)

**A1-F18AE-LWS-000**  
**Description**



**LEGEND**

- 1 F/A-18D
- 2 F/A-18C
- 3 F/A-18C AND F/A-18D

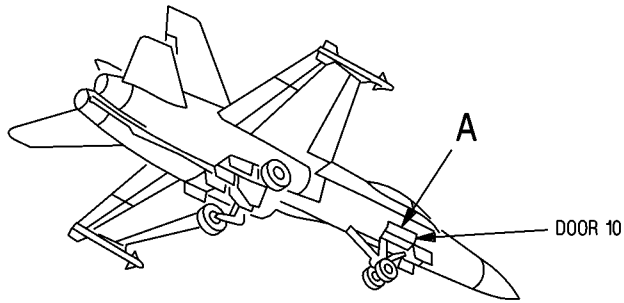


**52A-C159**

**A**

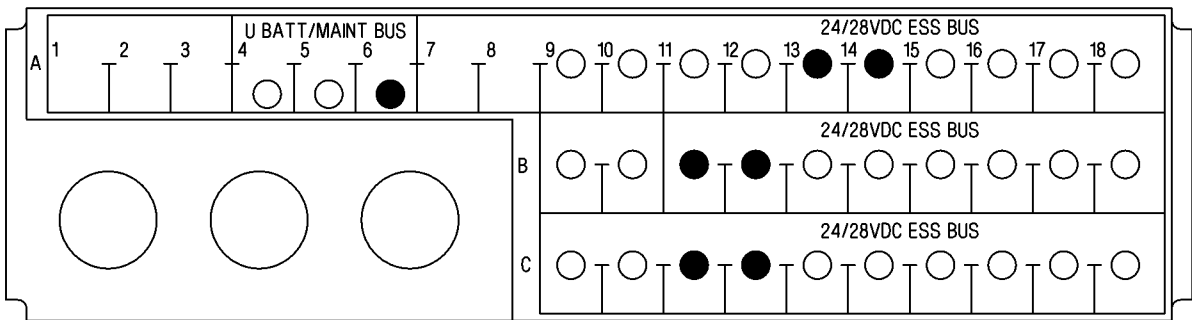
52A-C159 NO. 8 CIRCUIT BREAKER/RELAY PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
B6	1CBC088	UTIL PWR REC	L28VDC
3 B10	61CBC188	ARM STA 2 28 VDC 2	L28VDC
B11	61CBC092	GUN DCDR	L28VDC
2 C4	61CBC180	ARM STA 4 28 VDC 2	L28VDC
C11	61CBC091	GUN DCDR	L115VACφA
2 D4	61CBC189	ARM STA 3 28 VDC 2	L28VDC
1 D5	61CBC180	ARM STA 4 28 VDC 2	L28VDC
D7	61CBC050	FU FCTN CONT	L115VACφC
D9	1CBC087	UTIL PWR REC	L115VACφC
1 E5	61CBC189	ARM STA 3 28 VDC 2	L28VDC
E7	61CBC049	FU FCTN CONT	L115VACφB
E9	1CBC086	UTIL PWR REC	L115VACφB
F7	61CBC048	FU FCTN CONT	L115VACφA
F9	1CBC085	UTIL PWR REC	L115VACφA

**Figure 2-8. Armament System Circuit Breakers (Sheet 8)**



**LEGEND**

1 165207 AND UP:  
 165409 AND UP



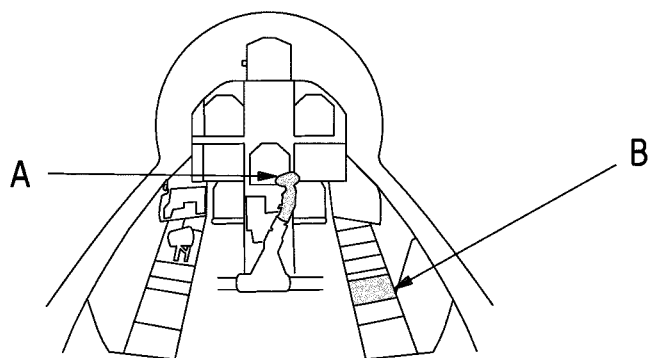
**52A-D092**  
 165207 AND UP

**A**

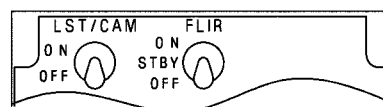
52A-D092 NO. 5 CIRCUIT BREAKER PANEL ASSEMBLY			
ZONE	REF DES	NOMENCLATURE	BUS
1 A6	61CBD353	SMS LOAD	UBATT/MAINT BUS
A13	61CBD135	ARM STA 8	ESS 24/28VDC
A14	61CBD002	SMS	ESS 24/28VDC
B11	61CBD136	ARM STA 6	ESS 24/28VDC
B12	61CBD134	ARM STA 7	ESS 24/28VDC
C11	61CBD130	ARM STA 2	ESS 24/28VDC
C12	61CBD131	ARM STA 3	ESS 24/28VDC

**Figure 2-8. Armament System Circuit Breakers (Sheet 9)**

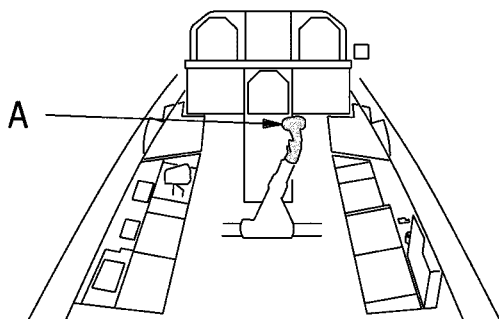
Description



F/A-18 COCKPIT

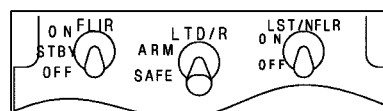


F/A-18A/B

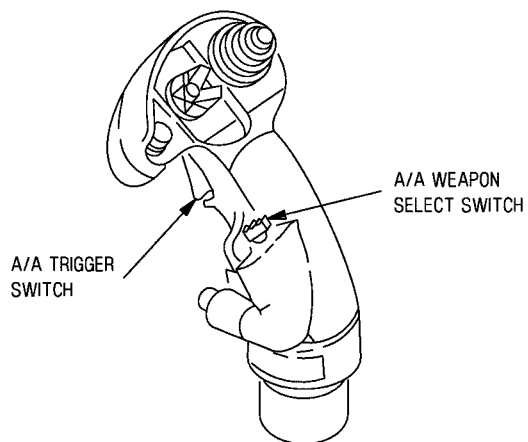


F/A-18 REAR COCKPIT

161354 THRU 163778; ALSO 163986  
AND UP TRAINER CONFIGURATION ONLY.

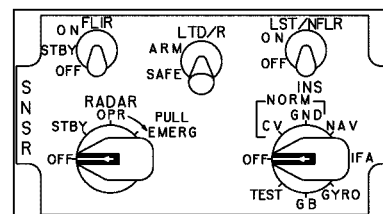


F/A-18C/D 163427 THRU 163782



CONTROLLER GRIP ASSEMBLY

A



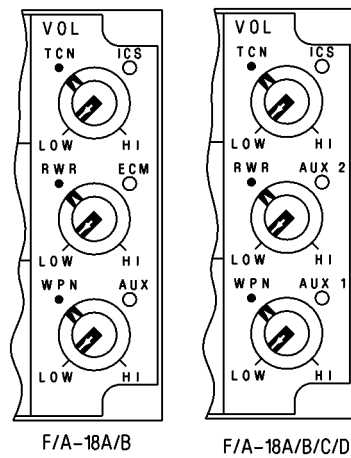
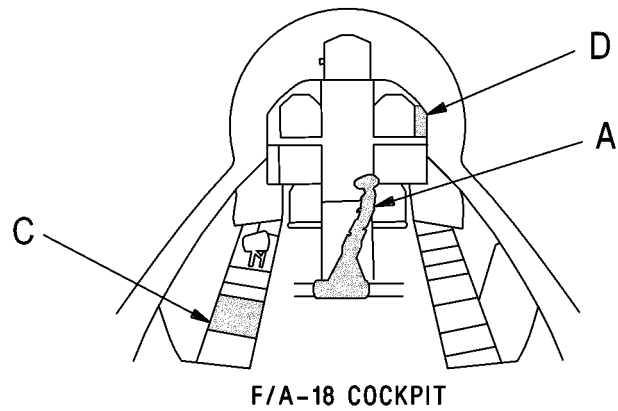
F/A-18C/D 163985 AND UP

SENSOR CONTROL BOX

B

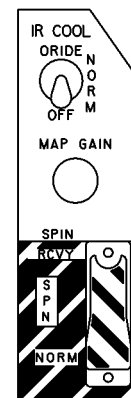
Figure 2-9. Air-to-Air Missile Control Systems (Sheet 1 of 3)





INTERCOMMUNICATION  
AMPLIFIER-CONTROL

C

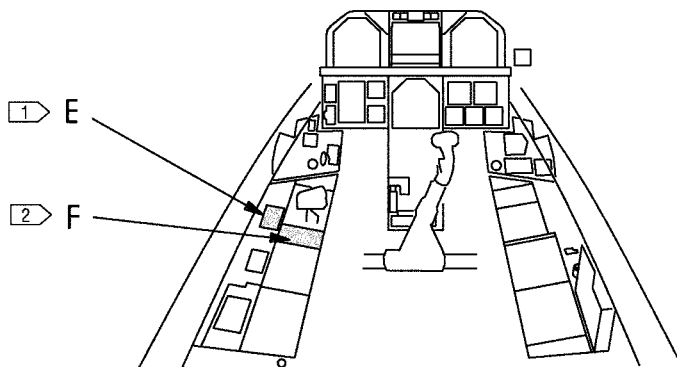


MAP GAIN  
CONTROL PANEL

D

Figure 2-9. Air-to-Air Missile Control Systems (Sheet 2)

**A1-F18AE-LWS-000**  
**Description**

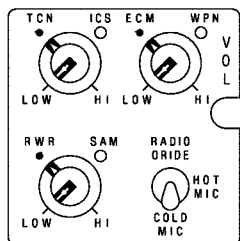


**F/A-18 REAR COCKPIT**

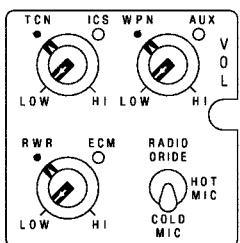
161354 THRU 163778; ALSO  
 163986 AND UP TRAINER  
 CONFIGURATION

**LEGEND**

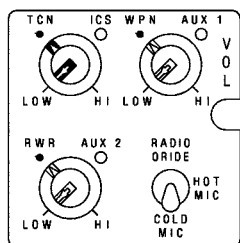
- 1 161354 THRU 163778
- 2 163986 AND UP



F/A-18B 161354  
 THRU 161360



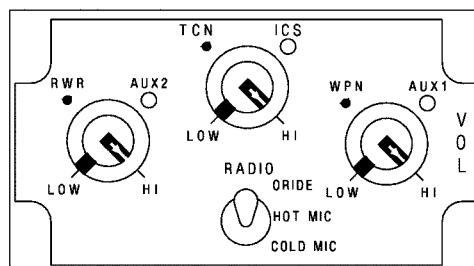
F/A-18B 161704  
 THRU 163123



F/A-18D 163434  
 THRU 163778

F/A-18 VOLUME  
 CONTROL PANEL

**E**



F/A-18D 163986 AND UP  
 VOLUME CONTROL PANEL

**F**

**Figure 2-9. Air-to-Air Missile Control Systems (Sheet 3)**

ready (MASTER ARM, AIM-7 tuned, AIM-9 cooled), the priority weapon is launched when the A/A missile trigger switch is actuated to the second detent.

2-49. **AIR-TO-GROUND WEAPON CONTROL SYSTEMS.** The air-to-ground weapon control systems (Figure 2-10) provide for the ability to select and launch, fire or release air-to-ground missiles, including AGM-65 Maverick, AGM-84 Harpoon/SLAM/SLAM ER, AGM-88 HARM, AGM-154 JSOW, bombs, and rockets. The air-to-ground weapon control system consists of the components described in Paragraph 2-15, which are common to all of the armament subsystems.

2-50. The following paragraphs describe additional controls and indicators of the air-to-ground weapon control system.

2-51. **Cage/Uncage Switch.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit right throttle grip, cages and uncages the selected seeker or designates the selected HARM target.

2-52. **TDC Switch.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit right throttle grip, and on the left and right hand controllers in the aft cockpit in F/A-18D night attack aircraft, the target designator control switch slews the weapon video crosshairs over the target.

2-53. **Sensor Control Switch.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit control grip, and on the left and right hand controllers in the aft cockpit in F/A-18D night attack aircraft, the sensor control switch is used to assign the TDC switch to the HUD or DDI.

2-54. **RAID/Forward-Looking Infrared (FLIR) Switch.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit left throttle grip, the RAID/FLIR switch sequences between HARM targets.

2-55. **Multi-Function Switch.** Located on the left and right hand controllers in the aft cockpit on F/A-18D night attack aircraft, the multi-function switch is a three-position switch used for weapon control. The forward position sequences between HARM target. The aft position cages and uncages the selected seeker. The down position functions as the RAID/FLIR switch.

2-56. **A/G Weapon Release Switch.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit control grip, the A/G weapon release switch, bomb button, or pickle switch initiates launch, firing, or release of selected air-to-ground weapons. The aft cockpit A/G weapon release switch is inoperative.

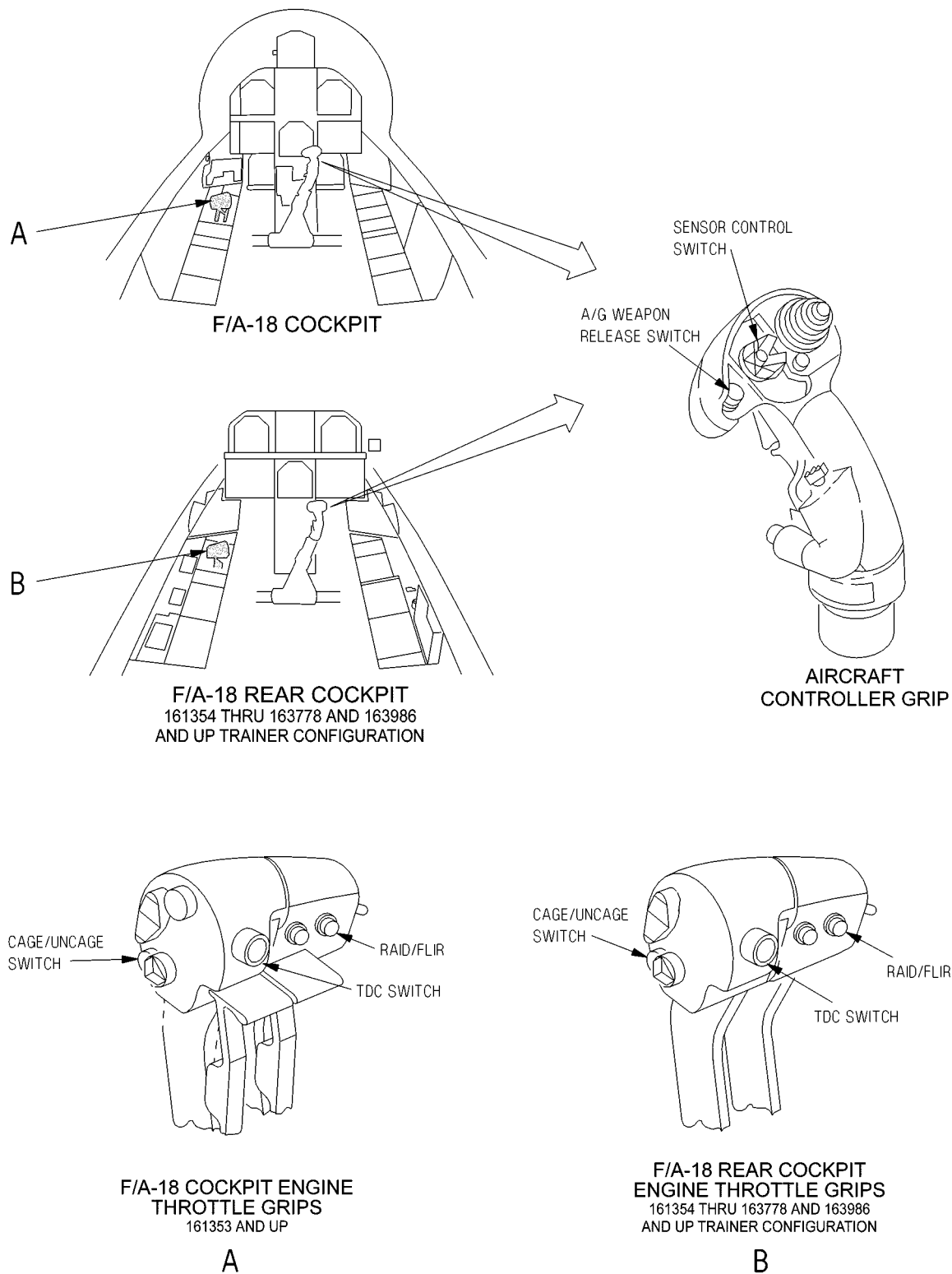
2-57. **Electronic Equipment Control (Up Front Control (UFC)).** Located on the pilot and aft cockpit instrument panel, the UFC enables pilot interface with the MC system for selection of weapon moding and release parameters.

2-58. **Electrical Fuzing System.** Located in the left (11 Left) fuselage panel on Non-SMUG aircraft and internal to the Armament Computer in SMUG aircraft, the electrical fuzing system provides the means to arm electrically fuzed air-to-ground weapons. The electrical fuzing system supplies selected (VT, INST, DLY 1, or DLY 2) fuzing voltage to electrically fuzed bombs at weapon release (when bomb rack hooks open).

2-59. **FLIR/LTD/R Switches.** Located on the SNSR panel on the pilot's right hand console, the FLIR and LTD/R switches provide power and SAFE/ARM controls for the FLIR/LASER pod.

2-60. When the A/G master mode is selected, all air-to-ground weapon racks are unlocked and the left DDI is commanded to the air-to-ground display. Air-to-ground weapon selection is made by selecting the weapon type on the wingform display. Provided the selected weapon is ready (MASTER ARM, bomb, and rocket release program complete, targets designated and/or weapons tracking), the priority weapon is launched, fired, or released when the A/G weapon release switch is pressed.

**A1-F18AE-LWS-000**  
**Description**



**Figure 2-10. Air-to-Ground Weapon Control System (Sheet 1 of 4)**

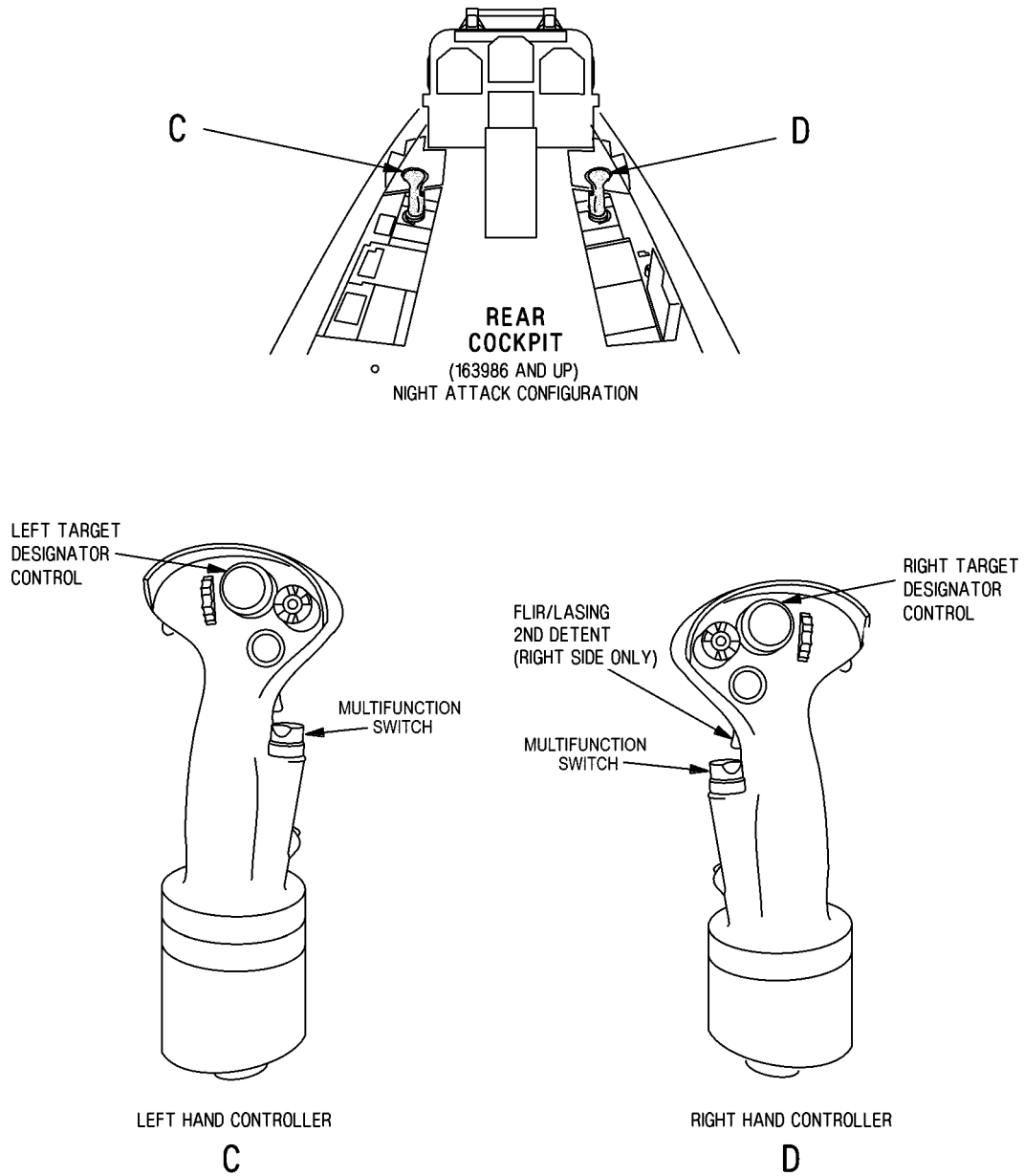
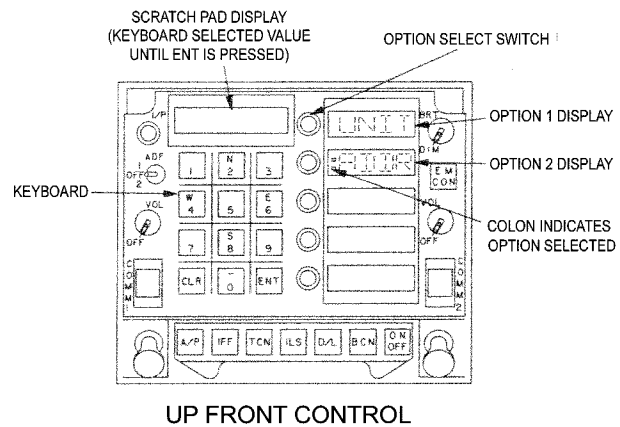
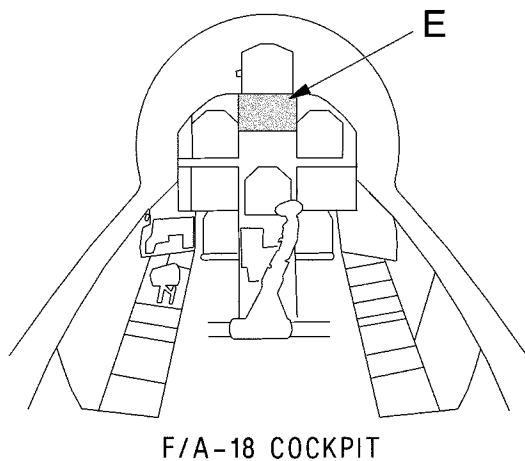
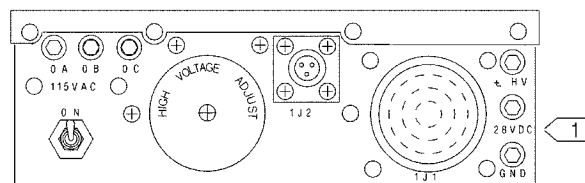
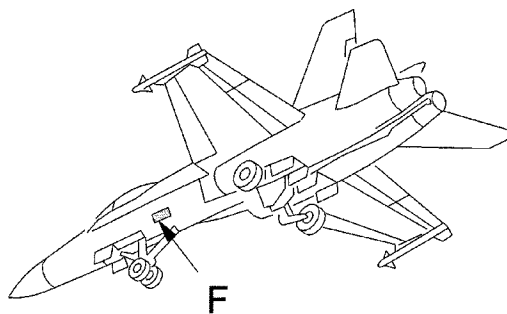


Figure 2-10. Air-to-Ground Weapon Control System (Sheet 2)

**A1-F18AE-LWS-000**  
**Description**



**E**

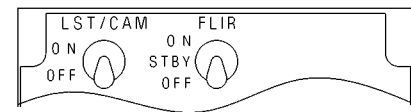
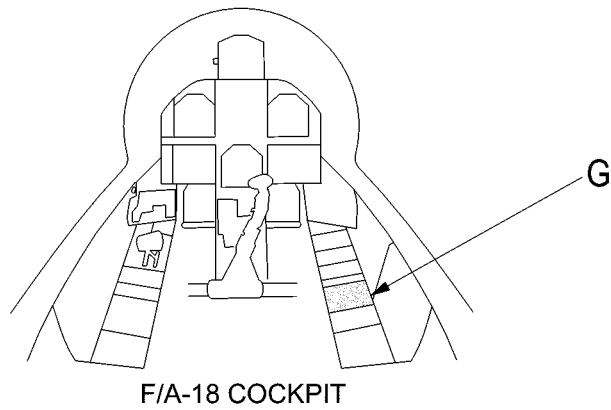


**F**

**LEGEND**

1 161353 THRU 165206

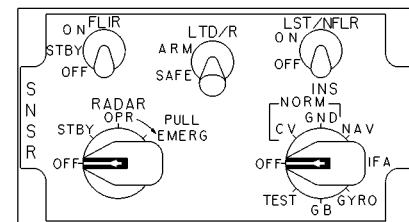
**Figure 2-10. Air-to-Ground Weapon Control System (Sheet 3)**



**F/A-18A/B**



**F/A-18C/D 163427 THRU 163782**



**F/A-18C/D 163985 AND UP**

**SENSOR CONTROL BOX**

**G**

**Figure 2-10. Air-to-Ground Weapon Control System (Sheet 4)**

## **A1-F18AE-LWS-000**

### **Description**

2-61. **JETTISON SYSTEM.** The jettison system (Figure 2-11) provides methods for jettisoning weapons and stores from the aircraft. The jettison system consists of the components described in Paragraph 2-15, which are common to all of the armament subsystems.

2-62. The following paragraphs describe additional controls and indicators of the jettison system.

2-63. **EMERG JETT PUSH TO JETT Switch.** Located on the Master Arm Control panel on the pilot's instrument panel, the EMERG JETT panel on the aft cockpit instrument panel (F/A-18D trainer) or on the EMERG JETT panel on the aft cockpit left vertical control panel (F/A-18D Night Attack), the emergency jettison switch initiates jettison from all pylon stations.

2-64. **SELECT JETT Switch.** Located on the pilot's left vertical control panel, the select jettison switch is a five-position switch used to select the station or type of jettison to be accomplished. The SAFE position inhibits all select jettison functions. The L FUS MSL and R FUS MSL or left and right fuselage missile position selects the respective fuselage station for selective jettison. The RACK/LCHR position selects weapons and stores on BRU-32s for selective jettison. The STORES position selects weapons (on VERs, MERs, TERs, and BRU-32s), Maverick launcher and weapon, air-to-air launcher and weapon, drop tanks and data pods on BRU-32s for selected jettison with the exception of HARM, which is fired off unguided.

2-65. **JETT STATION SELECT Switches.** Located on the pilot's instrument panel, the jettison station select switches are five pushbutton switches/indicators that correspond to the aircraft left outboard (LO), left inboard (LI), centerline (CTR), right inboard (RI), and right outboard (RO) pylon stations and are used to select the stations for selective jettison or auxiliary release.

2-66. **AUX REL Switch.** Located in the pilot's cockpit on the electronic countermeasures/infrared countermeasures control panel, the auxiliary release switch is a two-position switch used to enable or inhibit auxiliary release. The ENABLE position enables auxiliary release. The NORM position inhibits auxiliary release.

2-67. **SELECT JETT JETT Switch.** Located in the center of the SELECT JETT switch, the select jettison switch initiates selective jettison or auxiliary release of selected stations.

2-68. Emergency jettison is a mode of jettisoning all weapons/stores from the five pylon stations. Conditions for jettison are weight off wheels or landing gear control handle in UP position and the EMERG JETT, PUSH TO JETT switch pressed.

2-69. Selective jettison is a mode of individually jettisoning left fuselage missile, right fuselage missile, racks, launchers, and stores. Conditions for jettison are the landing gear control handle in the UP position, all gear up and locked, MASTER switch to ARM, stations selected by the JETT STATION SELECT switches, the SELECT JETT switch to the desired position, and the JETT pushbutton pressed.

2-70. Auxiliary release is a gravity mode of jettison used on the five pylon stations when emergency and selective jettison fails. Conditions for auxiliary release are a hung weapon, the landing gear handle in the UP position, all gear up and locked, MASTER switch to ARM, stations selected by the JETT STATION SELECT switches, SELECT JETT switch to RACK/LCHR, AUX REL switch to ENABLE, and the SELECT JETT, JETT switch pressed.

2-71. **GUN SYSTEM.** The gun system (Figure 2-12) provides the means to select, arm, and fire the M61A1 gun system in air-to-air and air-to-ground modes. The gun system consists of the components described in Paragraph 2-15, which are common to all of the armament subsystems.



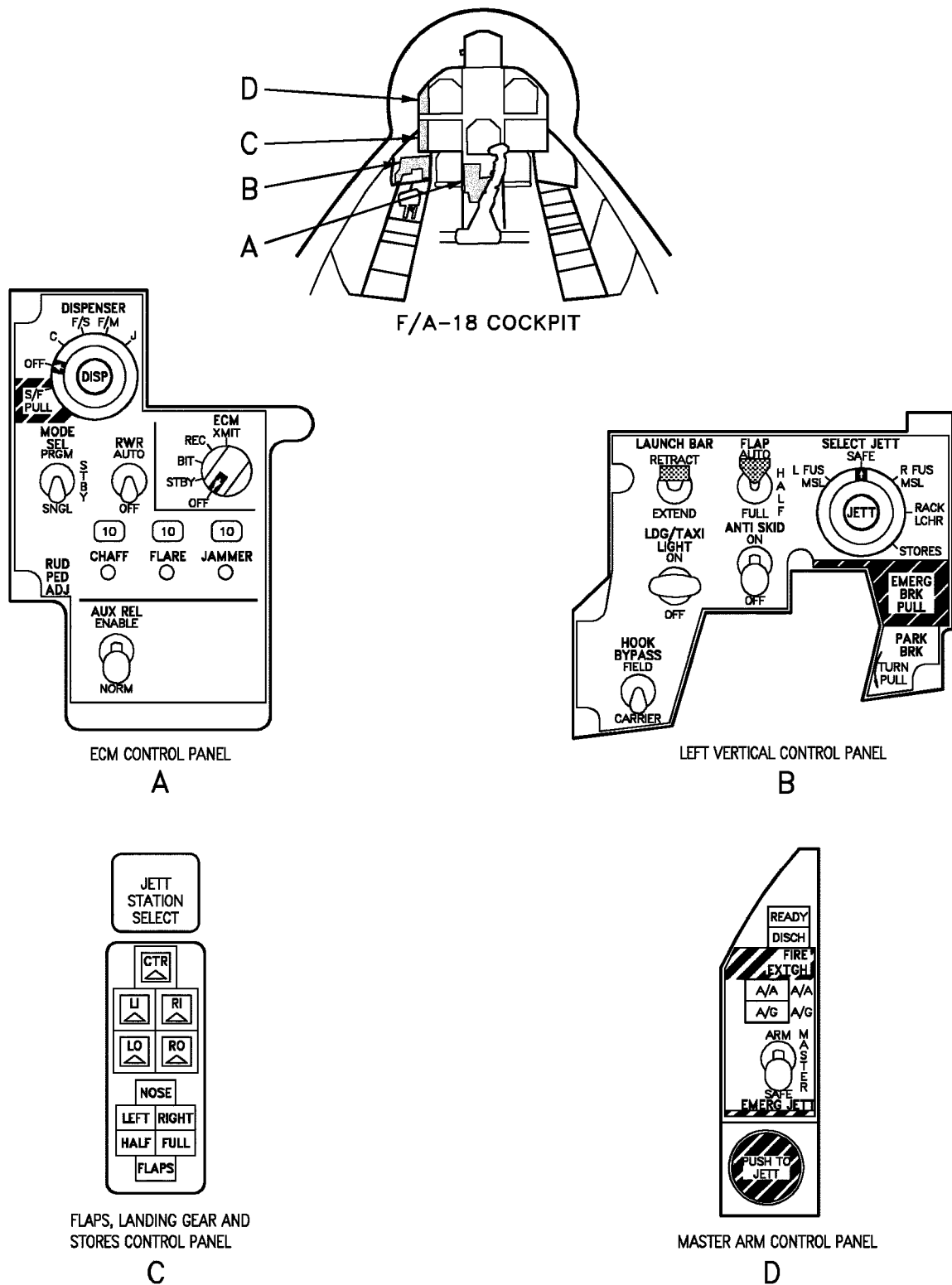
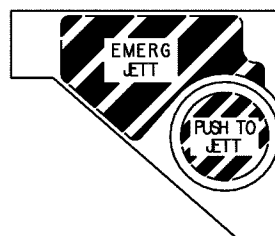
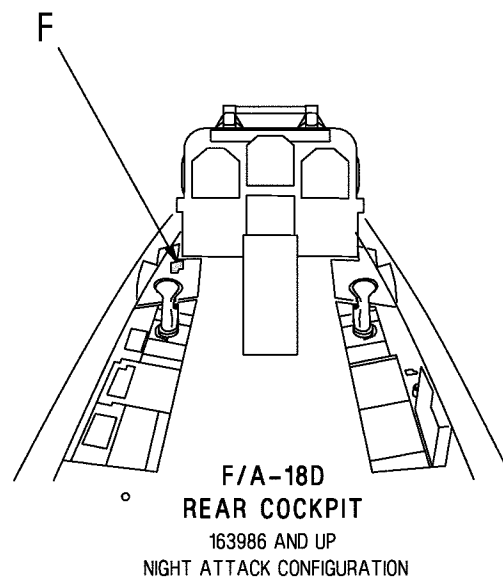
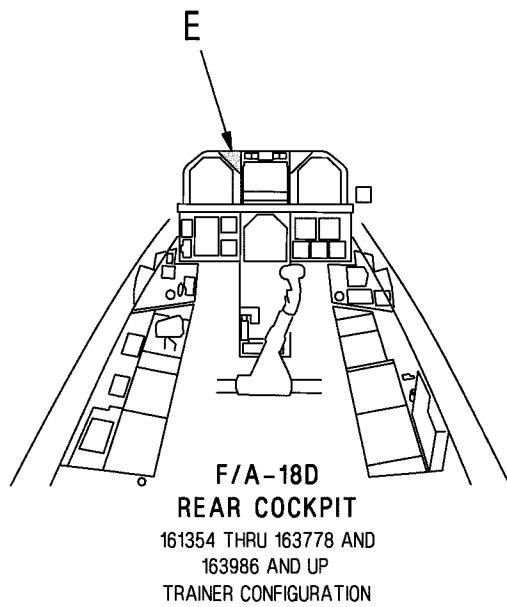


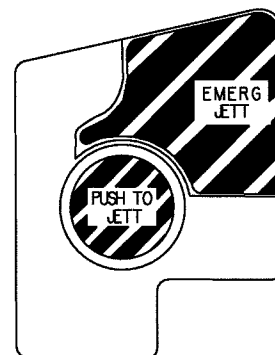
Figure 2-11. Jettison System (Sheet 1 of 2)

Description



EMERG JETT PANEL

E



EMERG JETT PANEL

F

Figure 2-11. Jettison System (Sheet 2)

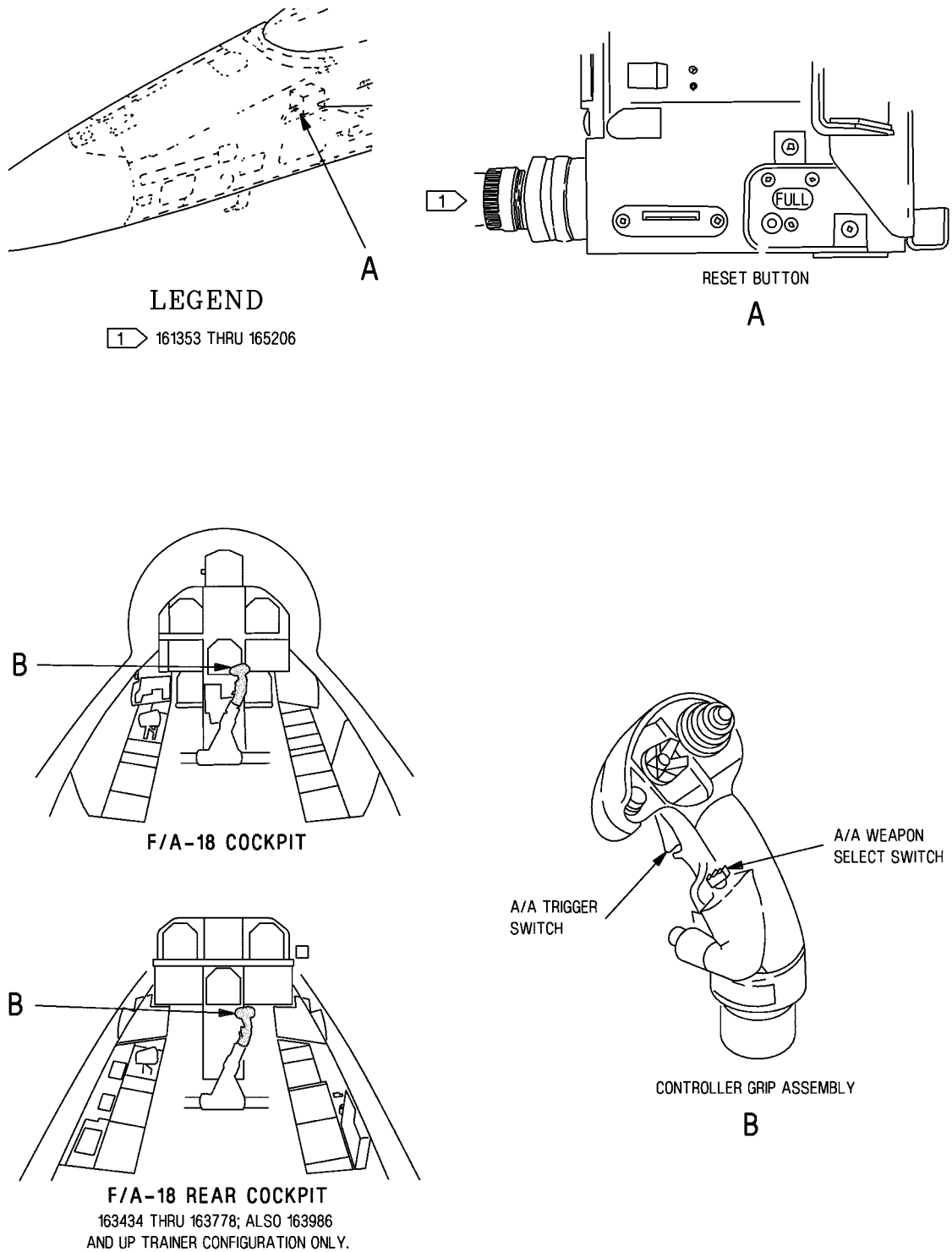


Figure 2-12. Gun System

**Description**

2-72. The following paragraphs describe additional components controls and indicators of the gun system.

2-73. **M61A1 Gun and Ammunition Storage/Feed Subsystem.** The gun is a six barrel, hydraulically driven, electrically fired weapon, located in the nose of the aircraft. The gun can fire at a rate of 4000 or 6000 rounds per minute and can be set for unrestricted firing or be limited to a preset number of rounds. The ammunition feed system consists of the aircraft transfer unit, ammunition feed, return, bypass chutes, and the ammunition drum. The system can accommodate a maximum of 578 rounds of ammunition. A last round switch prevents feeding fired cases through the gun. Firing voltage, gun hydraulic drive, and gun gas purge door command are inhibited by a last round input. Approximately six rounds may coast through the gun each time the trigger is released. Fired 20mm cases and unspent rounds are returned to the ammunition drum for storage until the system is downloaded. A hydraulic powered motor drives the gun and feed subsystem through a gun drive unit.

2-74. **Gun Hydraulic and Gas Purge Subsystem.** The gun hydraulic subsystem controls hydraulic fluid flow to the gun door control valve and fluid flow through the gun rate dual flow valve to the gun hydraulic motor. The gun rate dual flow valve controls the gun firing rate (high, 6000 rounds per minute; low 4000 rounds per minute). When the gun is fired, hydraulic pressure from the hydraulic gun drive motor is applied to the gun gas scavenge door actuator. The gun gas scavenge door actuator opens the gun bay scavenge door 3 inches, which provides an air intake. This opening allows outside air to enter the gun compartment and will force the gas out the lower louvers. After gun firing, spring tension on the actuator piston closes the gun bay scavenge door. During gun firing, electrical power is removed from the gun gas purge air flow valve. This opens the valve, which allows engine bleed air to discharge through the gun gas purge vent. The discharge of engine bleed air exhausts gun gas from the breech through louvers in the lower aircraft moldline.

2-75. **Gun Electronics (Non-SMUG).** The gun encoder-decoder provides an interface with the armament computer and gun. When the armament computer supplies power to the encoder-decoder, it allows gun firing. The face of the encoder-decoder contains a reset switch with a view window. When the reset switch is pressed, FULL will be displayed in the view window. The reset switch is only pressed when the gun system is loaded. This allows a rounds count of 578 to be shown on the DDI in the wing form display for the gun. If the gun has been partially fired, LOAD will be displayed in the view window. This indicates that the gun is only partially loaded.

2-76. **Gun Electronics (SMUG).** The functions of the encoder-decoder are performed by the armament computer.

2-77. **A/A Weapon Select Switches.** Located on the pilot and (in trainer configured F/A-18B/D aircraft) aft cockpit control sticks, the A/A weapon select switch is a four-position switch used to select air-to-air weapons and configure the right DDI to the RADAR attack display. The aft position selects the gun.

2-78. **A/A Missile Trigger Switch.** Located on the pilot's control stick, the A/A missile trigger switch is a two-position switch. The first detent initiates actuation of the HUD camera. The second detent initiates firing of the gun.

2-79. Gun selection in the A/G mode is made by selecting the GUN weapon type on the DDI. GUN will have a box around it, and the rounds remaining indication will be shown in the wingform display. If another weapon is selected with a box around it, and the gun is selected with a box around it, hot gun (gun fire or weapon release can be initiated) is selected. Provided the gun is ready (MASTER ARM), the gun is fired when the A/A missile trigger is actuated to the second detent.

2-80. Air-to-air gun is selected with the A/A weapon select switch. At that time, all air-to-air launchers are unlocked, the right DDI is commanded to the RADAR attack display, and the gun is automatically selected to

the high firing rate. Provided the gun is ready (MASTER ARM), the gun is fired when the A/A missile trigger is actuated to the second detent.

## **2-81. ECM DISPENSING SYSTEMS (Figure 2-13).**

2-82. **AN/ALE-39 COUNTERMEASURES DISPENSING SYSTEM.** (F/A-18A-D 161353 thru 164980) The ALE-39 countermeasures dispensing system dispenses decoys to confuse and jam enemy electronic tracking, missile guidance, and homing systems. The system ejects expendable payloads consisting of chaff, flares, or RF jammers singly or in groups from two 30-round dispenser magazines located on the lower fuselage under the engine intakes.

2-83. The following paragraphs describe system components, controls, and modes of the ALE-39 countermeasures dispensing system.

2-84. **ECM Control Panel.** Located on the pilot's lower center console, the ECM control panel provides the means for the pilot to select dispense modes, initiate dispenses, and fire flare payloads in salvo. The DISPENSER switch is a six-position rotary switch that selects payload dispense modes. The OFF position inhibits all payload dispenses. The C position enables designated chaff payloads to be dispensed. The F/S position enables single flare payloads to be dispensed. The F/M position enables multiple flare payloads to be dispensed. The J position enables jammer payloads to be dispensed. The S/F PULL position initiates the dispense of all loaded flare payloads. The DISP, or dispense switch, initiates expendable dispenses. The MODE SEL, or mode select switch, selects the operating mode of the dispensing system. The STBY, or standby position, enables dispenser system power. The PRGM, or program position, allows programmed payload dispenses as determined by ALE-39 programmer settings. The SNGL, or single position, allows for dispensing of single payloads. The RWR AUTO, or WRO WR AUTO switch, is not functional. Three payload remaining counters, set by corresponding switches, reflect the initial payload inventories when loaded and provide subtractive payload remaining indications.

2-85. **AN/ALE-39 Programmer.** Located in the upper equipment bay on F/A-18A/C aircraft and in the aft cockpit left hand console on F/A-18B/D aircraft, provides programming and system reset capabilities for programmed dispenses and controls operation of the sequencer switches for each dispenser housing.

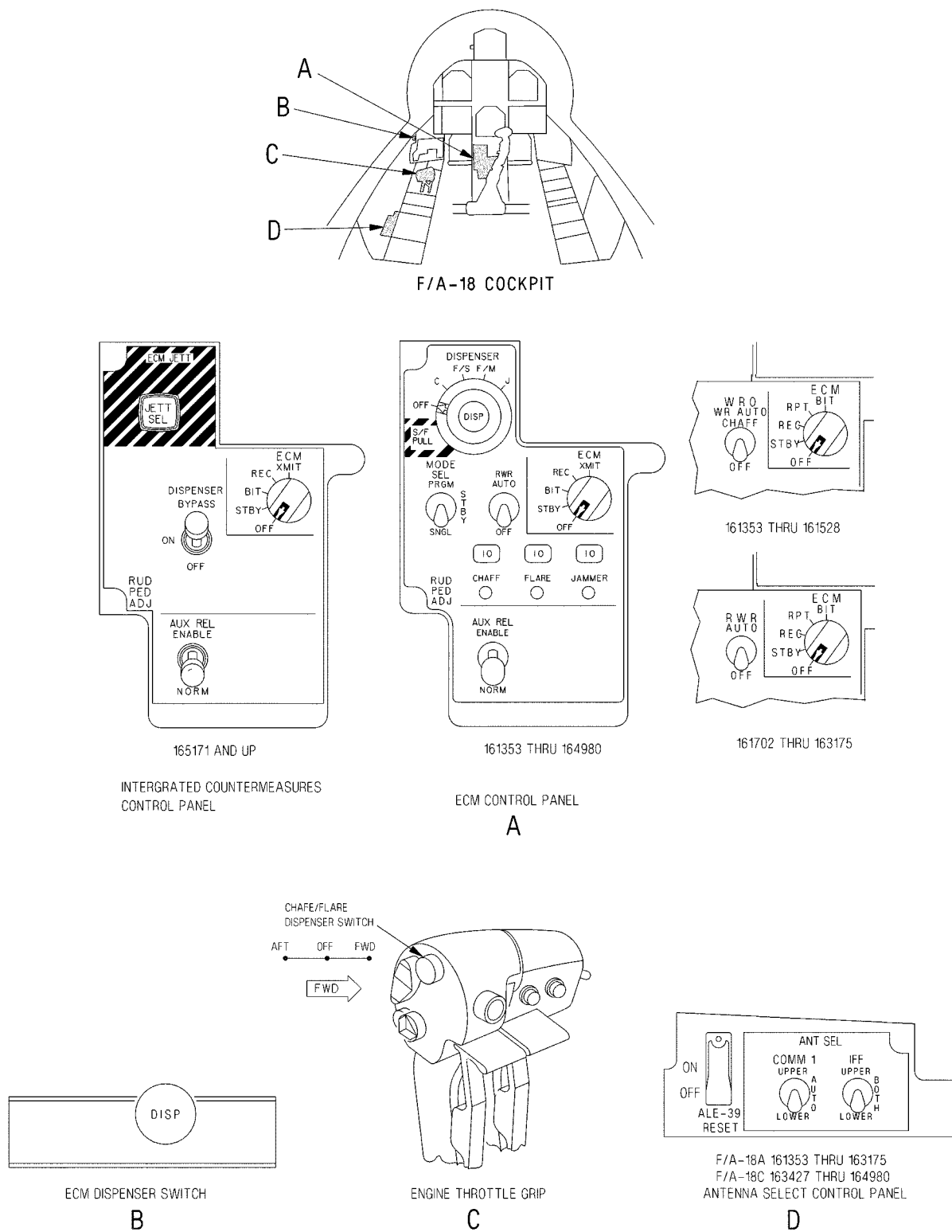
2-86. **Chaff/Flare Dispense Switch.** Located on the right throttle grip, the chaff/flare dispense switch is a three-position switch that initiates chaff and flare dispenses. The mid or neutral position is off. The aft position initiates flare payload dispenses. The forward position initiates chaff payload dispenses. The switch is spring loaded to return to the mid position.

2-87. **ECM DISP Switch.** Located on the left canopy ledge in the pilot's and (F/A-18D Night Attack) aft cockpit, the ECM dispense switches are wired in parallel with the ECM panel DISP switch and initiate the dispense of selected payloads.

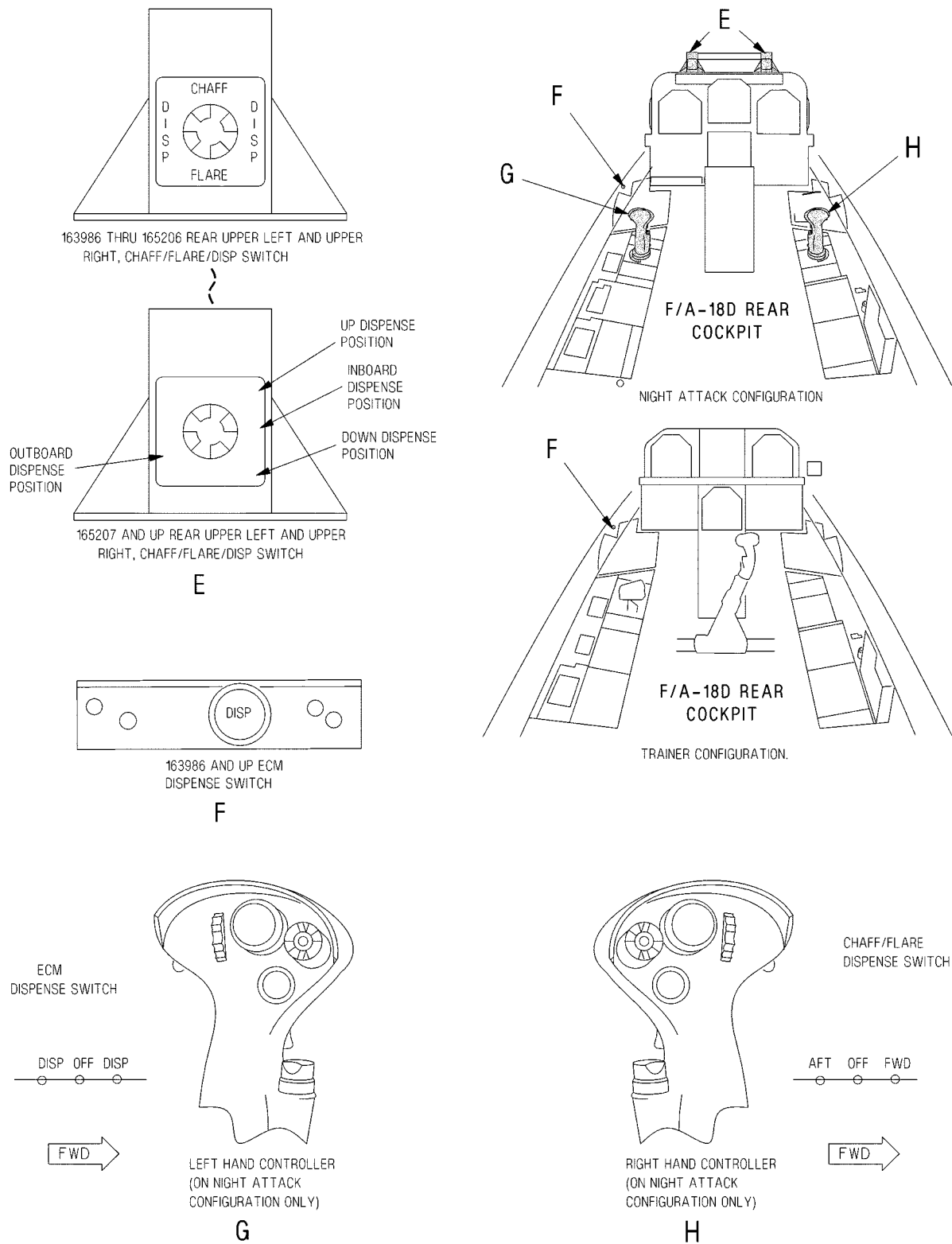
2-88. **Left and Right Hand Controller Dispense Switches.** (F/A-18D Night Attack) The left and right hand controller ECM dispense switches are three-position dispense switches. The left switch is wired in parallel with the canopy ledge ECM DISP. The right switch is wired in parallel with the right throttle chaff/flare dispense switch.

2-89. **Chaff/Flare Handle Assembly.** (F/A-18D Night Attack) Located above the aft cockpit instrument panel, the chaff/flare handle assembly dispense switches are five-position switches that initiate payload dispenses. The up and down (or CHAFF/FLARE) positions are wired in parallel with the right throttle grip chaff/flare dispense switch. The left and right (or DISP switches) are wired in parallel with the ECM control panel DISP and ECM DISP switches.

**A1-F18AE-LWS-000**  
**Description**



**Figure 2-13. ECM System Controls (Sheet 1 of 3)**



**Figure 2-13. ECM System Controls (Sheet 2)**

Description

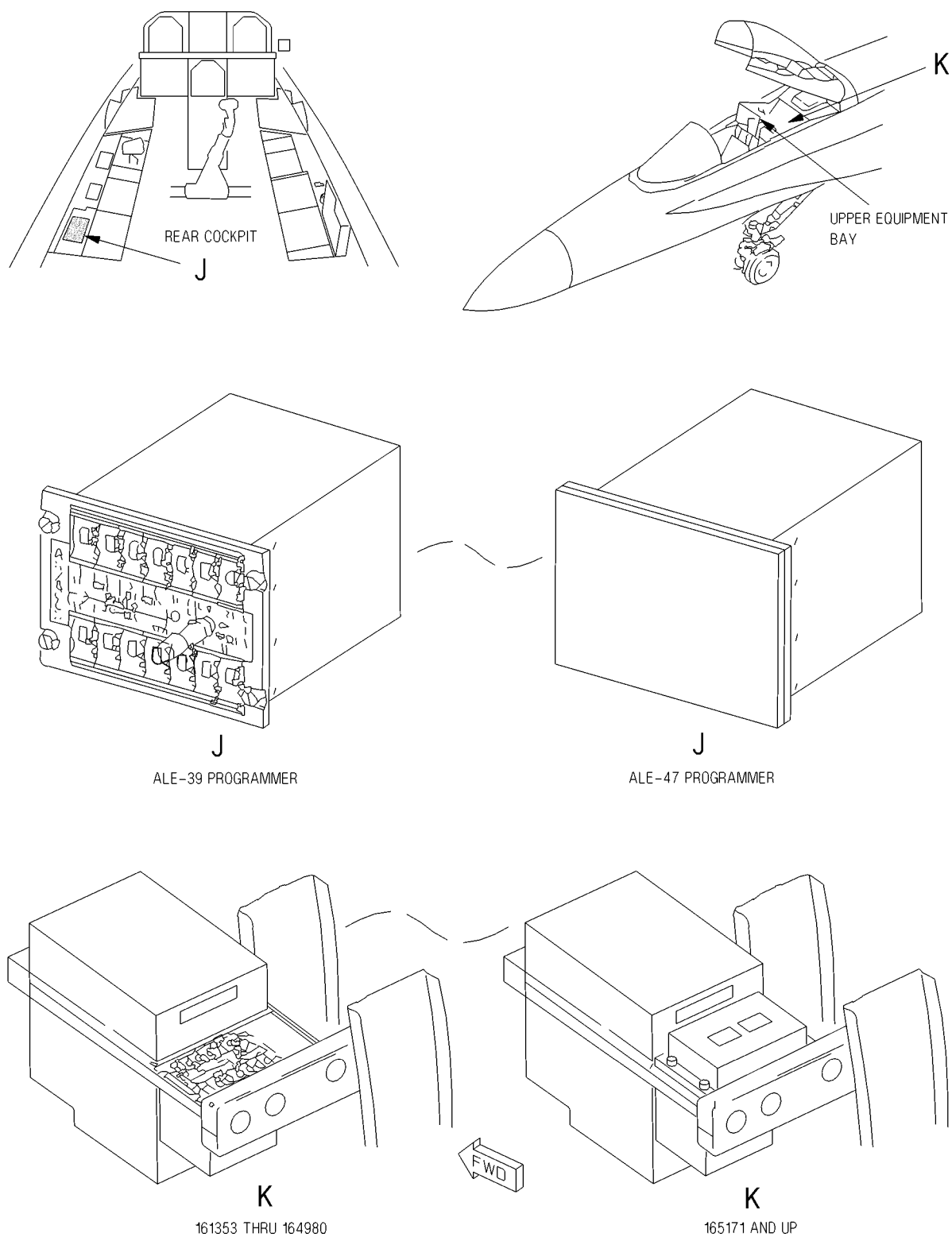


Figure 2-13. ECM System Controls (Sheet 3)



2-90. **ECM Safety Switch.** (F/A-18C/D 163985 thru 164980) Located on the left fuselage, the ECM safety switch provides a means of safing the countermeasures dispensing system. When flush with the aircraft surface, the safety is inhibited. When extended, the safety is enabled.

2-91. **ALE-39 RESET Switch.** Located on the ANT SEL control panel on the pilot's left hand console, the ALE-39 reset switch is a guarded switch used to reset the ALE-39 system to enable pilot training without loaded expendables.

2-92. **AN/ALE-47 COUNTERMEASURES DISPENSING SYSTEM.** (F/A-18C/D 165171 and up) The ALE-47 countermeasures dispensing system provides for threat-adaptive, reprogrammable computer controlled dispenses of decoys to confuse and jam enemy electronic tracking, missile guidance, and homing systems. The system ejects expendable payloads consisting of chaff, flares, or RF jammers singly or in groups from four 30-round dispenser magazines located on the lower fuselage under the engine intakes. The ALE-47 countermeasures dispensing system consists of the components described in Paragraph 2-15, which are common to all of the armament subsystems.

2-93. The following paragraphs describe system components, controls, and modes of the ALE-47 countermeasures dispensing system.

2-94. **Integrated Countermeasures Control Panel.** Located on the pilot's lower center console, the integrated countermeasures control panel provides the means for the pilot to apply power to the system, select Bypass mode, and fire flare payloads in salvo. The DISPENSER switch is a three-position switch. The OFF position removes power from the system. The ON position applies power to the system, and the BYPASS allows for degraded mode dispenses in the event of a critical programmer fail. The ECM JETT JETT SEL switch is a pushbutton switch/indicator that, when pressed, enables the jettison of all payloads identified in the Mission Data File (MDF) as being jettisonable, typically flares, and IR payloads.

2-95. **AN/ALE-47 Programmer.** Located in the upper equipment bay on F/A-18C aircraft and in the aft cockpit left hand console on F/A-18D aircraft, functions as the central processor for the ALE-47 system. Contains the MDF and controls dispensing for all programs.

2-96. **Dispenser Magazine ID Switches.** Located on the printed circuit board of the dispenser magazines, two four-position switches (A-D and 1-4) compression switches that indicate specific expendable payload loadout configurations for decoding by and use of the programmer.

2-97. **Chaff/Flare Dispense Switch.** Located on the right throttle grip, the chaff/flare dispense switch is a three-position switch that initiates chaff and flare dispenses. The mid or neutral position is off. The aft position does selected manual initiate in auto, semi, or manual modes and a flare program release in bypass mode. The forward position initiates semi/auto consent, manual program 5, or chaff program in bypass mode. The switch is spring loaded to return to the mid position.

2-98. **ECM DISP Switch.** Located on the left canopy ledge in the pilot's and (F/A-18D Night Attack) aft cockpit, the ECM dispense switches are wired in parallel with the ECM panel DISP switch and initiate a manual program 6 dispense or an MDF defined amount of dispenses in bypass.

2-99. **Left and Right Hand Controller Dispense Switches.** (F/A-18D Night Attack) The left and right hand controller ECM dispense switches are three-position dispense switches. The left switch is wired in parallel with the canopy ledge ECM DISP. The right switch is wired in parallel with the right throttle chaff/flare dispense switch. Both hand controllers are not operational in bypass mode.

**Description**

**2-100. Chaff/Flare Handle Assembly.** (F/A-18D Night Attack) Located above the aft cockpit instrument panel, the chaff/flare handle assembly dispense switches are five-position switches that initiate payload dispenses. Both chaff/flare handle assemblies are not operational in bypass mode. The up and down (or CHAFF/FLARE) positions are wired in parallel with the right throttle grip chaff/flare dispense switch. The left and right (or DISP) are wired in parallel with the ECM control panel DISP and ECM DISP switches.

**2-101. ICM Safety Switch.** Located on the left fuselage, the ICM safety switch provides a means of safing the countermeasures dispensing system. When flush with the aircraft surface, the safety is inhibited. When extended, the safety is enabled.

**2-102.** The ALE-47 countermeasures dispensing system moding and control is performed through the electronic warfare (EW) display on the DDIs. The system interfaces with the onboard EW sensors and provides for manual, semi-automatic (EW sensor prompted, pilot initiated) or automatic (EW system initiated) payload dispenses. While capabilities exist to program dispense programs, optimized dispenses are programmed into the MDF.

**2-103. SUSPENSION/ACCESSORY EQUIPMENT.**

**2-104.** The following data are intended to provide ordnance personnel with a brief description of suspension and accessory equipment specifically used with the F/A-18 aircraft. Detailed information is available in reference publications (Table 1-1).

**2-105. SUU-62 FUSELAGE CENTERLINE PYLON.** Fuselage centerline SUU-62 pylons (Figure 2-14) provide the necessary mechanical and electrical interface between the aircraft fuselage and the stores to be carried. The BRU-32 bomb rack is contained internally and provides pylon/weapon interface when the pylon is attached to the fuselage.

**2-106. SUU-63 WING PYLON.** Wing SUU-63 pylons (Figure 2-14) provide the necessary mechanical and electrical interface between the aircraft wing structure and the stores to be carried and are capable of being installed at any of the wing stations. The BRU-32 bomb rack is contained internally and provides the pylon/weapon interface when the pylon itself is attached to the wing.

**2-107. PARENT RACK.** Parent racks are primary items of suspension equipment. The F/A-18 aircraft utilizes the BRU-32 as its parent rack. BRU-32 bomb ejector racks (Figure 2-14) are used to suspend single weapon stores, BRU-33s, MERs/BRU-41s, BRU-42s, and LAU-115, 117, 118 missile launchers using 14 and 30 inch suspension hooks. Features of the bomb rack are safety interlock and automatic sway bracing. Sensing switches are incorporated to indicate to the armament computer that a store is loaded. The primary ejection unit uses two cartridges to generate the required gas pressure for rack operation. The auxiliary release unit uses one cartridge, which opens the hooks only, should primary ejection fail. Nose and tail arming units are provided for mechanical fuzes, and a receptacle is provided for connection of the electric fuze. There are also provisions for positive arming by use of positive arming latches.

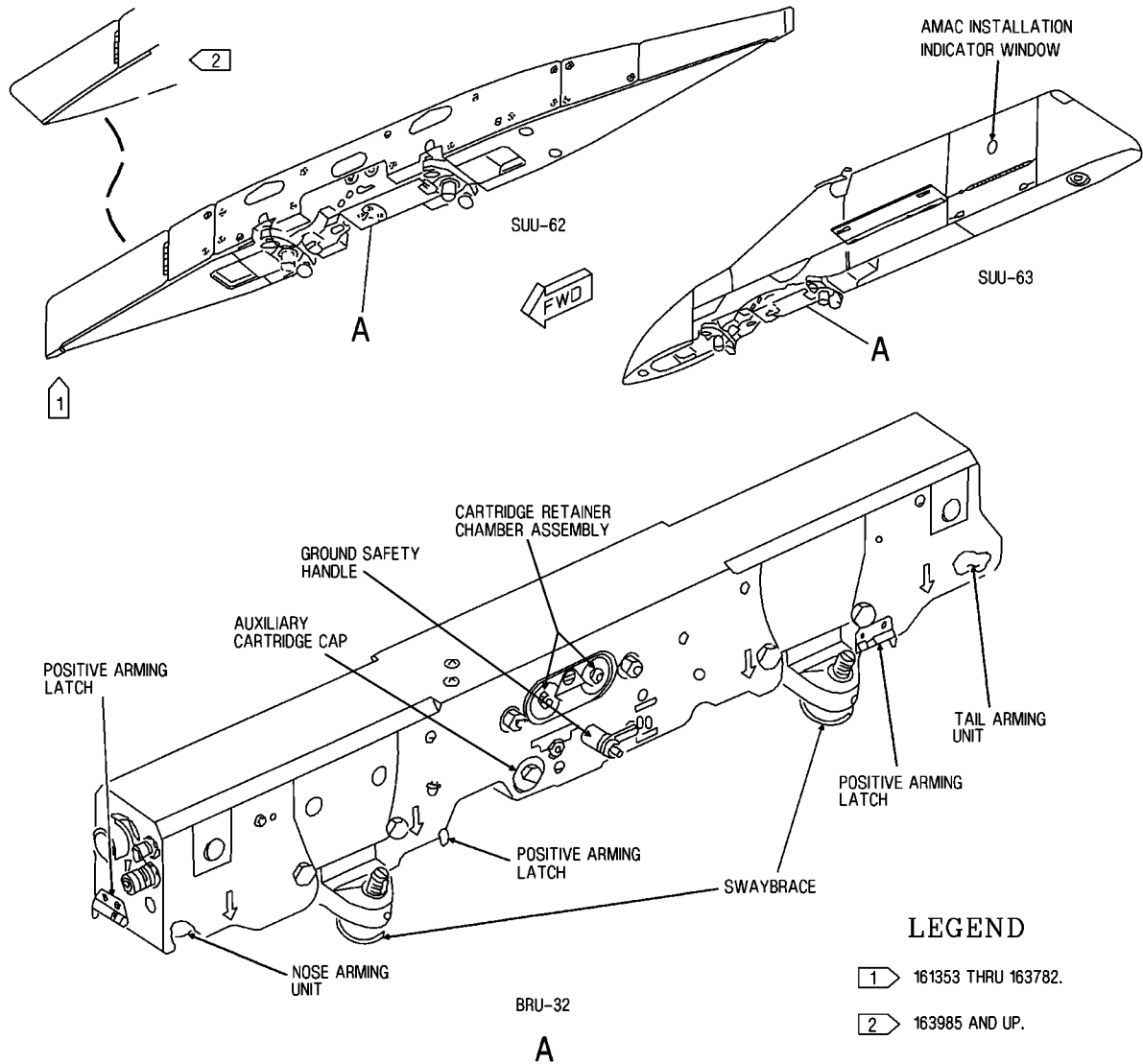
**2-108. ACCESSORY RACKS.** Accessory racks are used to expand the capability of a weapon system and include the following:

**2-109. BRU-33 Vertical Ejector Rack (VER).** The BRU-33 vertical ejector rack (VER) (Figure 2-15) is used to suspend and release two weapons/stores. A ground safety handle is used to lock and unlock the rack.

**2-110. A/A37B-6 Multiple Ejector Rack (MER)/BRU-41 (IMER).** The MER/BRU-41 (Figure 2-15) is designed to carry and release up to six weapons/stores. Each ejector unit assembly is provided with a safety stop lever located on the aft swaybrace assembly and does not require mechanical safety pins. An electrical safety

**PHYSICAL CHARACTERISTICS:**

	SUU-62	SUU-63	BRU-32
WEIGHT:	130 LB.	273 LB.	76.5 LB.
DIMENSIONS:			
LENGTH:	110 IN.	120 IN.	37 IN.
WIDTH:	7.1 IN.	6 IN.	7.3 IN.
HEIGHT:	7.6 IN.	28 IN.	7.1 IN.

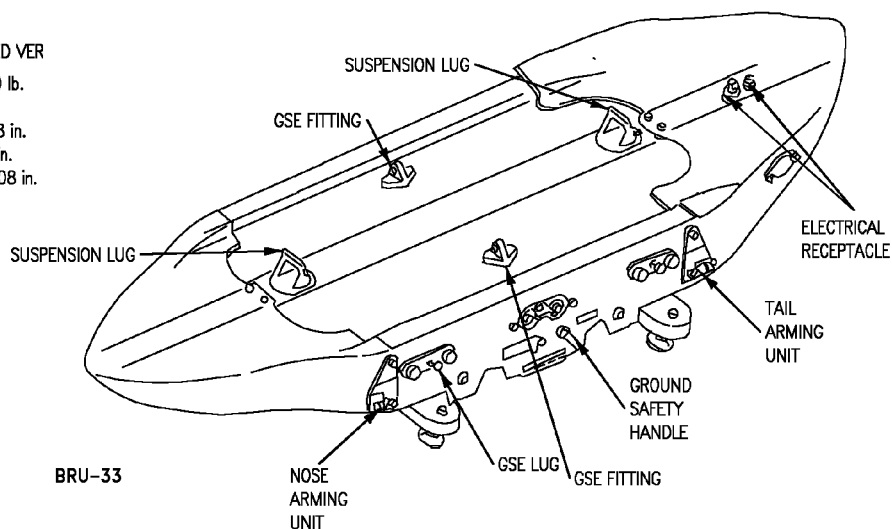


**Figure 2-14. Basic Suspension Equipment**

# Description

## PHYSICAL CHARACTERISTICS:

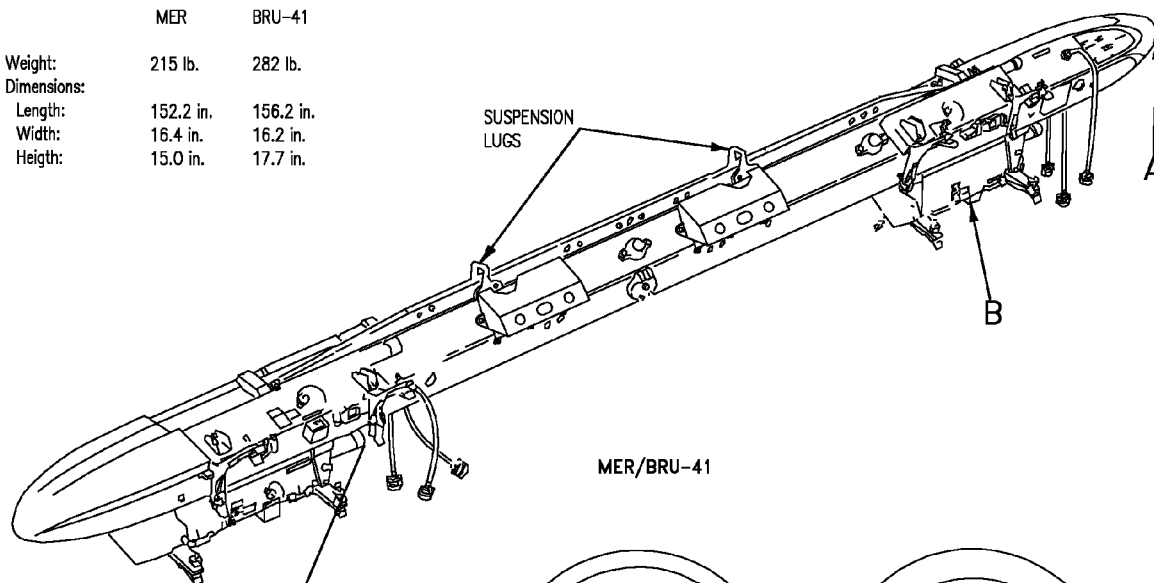
	VER	CANTED VER
Weight:	174 lb.	200 lb.
Dimensions:		
Length:	67.8 in.	69.8 in.
Width:	25 in.	29 in.
Height:	10.3 in.	10.08 in.



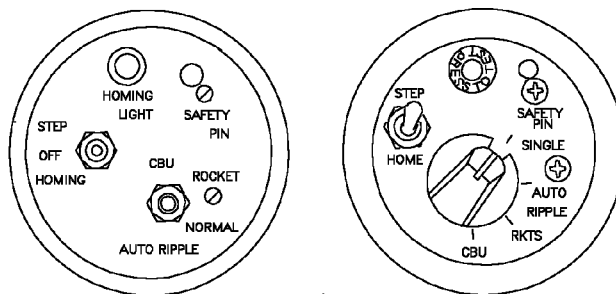
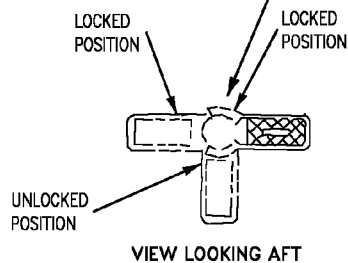
BRU-33

## PHYSICAL CHARACTERISTICS:

	MER	BRU-41
Weight:	215 lb.	282 lb.
Dimensions:		
Length:	152.2 in.	156.2 in.
Width:	16.4 in.	16.2 in.
Height:	15.0 in.	17.7 in.



MER/BRU-41



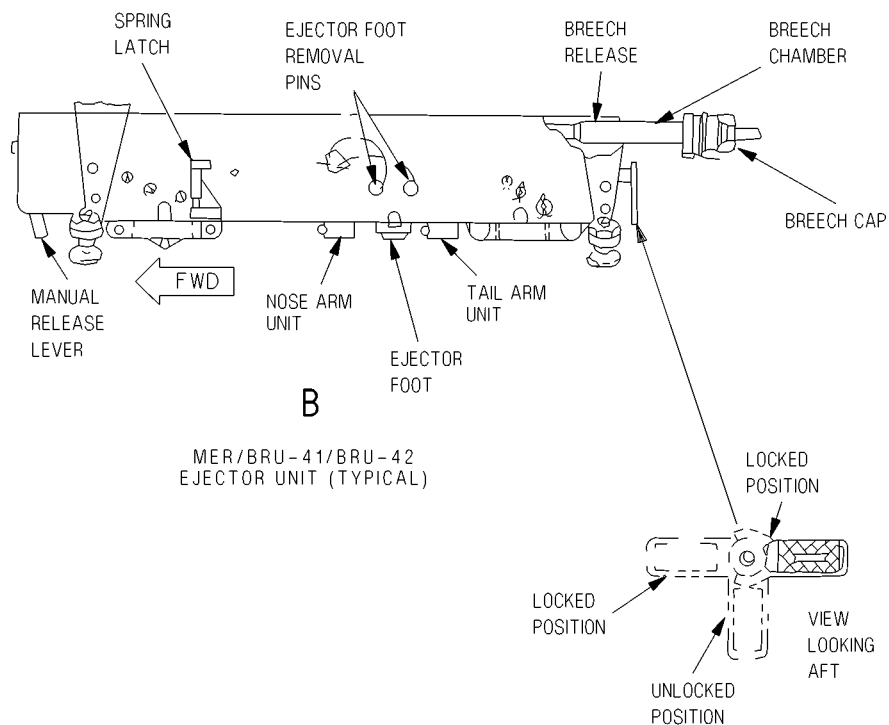
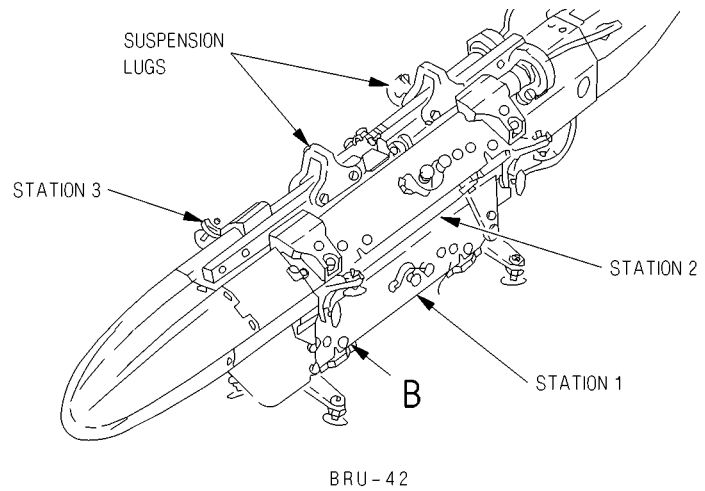
A

MER TAILCONE (ONLY)

Figure 2-15. Accessory Suspension Equipment (Sheet 1 of 2)

**PHYSICAL CHARACTERISTICS:**

Weight: 112.5 lb.  
 Dimensions:  
 Length: 67.0 in.  
 Width: 16.2 in.  
 Height: 17.7 in.



**Figure 2-15. Accessory Suspension Equipment (Sheet 2)**

**Description**

pin is installed in the aft end of the MER to open the stepping and firing circuits. The BRU-41 does not require safety pins.

**2-111. BRU-42 Improved Triple Ejector Rack.** The BRU-42 (Figure 2-15) is designed to carry and release up to three weapons/stores. Each ejector unit assembly is provided with a safety stop lever located on the aft swaybrace assembly and does not require safety pins.

**2-112. LAUNCHERS.** Launchers are used to carry or suspend self-propelled weapons. Most launchers serve to guide the self-propelled weapons on their first few inches of flight.

**2-113. LAU-7 Series Missile Launcher.** The LAU-7 is a rail type missile launcher (Figure 2-16) that carries and launches the AIM-9 (Sidewinder) series missiles. The LAU-7 series missile launcher also carries various instrumentation packages.

**2-114. LAU-115 Guided Missile Launcher.** The LAU-115 is a rail type missile launcher (Figure 2-16) that carries and launches AIM-7 (Sparrow) series missiles. The LAU-115 has provisions for mounting two LAU-7 or two LAU-127 launchers for AIM-9 missiles or two LAU-127 launchers for AIM-120 missiles.

**2-115. LAU-116 Guided Missile Launcher.** The LAU-116 is an ejector type missile launcher (Figure 2-16) that is fuselage mounted and carries and launches AIM-7 (Sparrow) missiles and on aircraft 163427 AND UP, the AIM-120 (AMRAAM) missile.

**2-116. LAU-117 Guided Missile Launcher.** The LAU-117 is a rail type missile launcher (Figure 2-16) that carries and launches the AGM-65 (Maverick) missile.

**2-117. LAU-118 Guided Missile Launcher.** The LAU-118 is a rail type missile launcher (Figure 2-16) that carries and launches the AGM-88 (HARM).

**2-118. LAU-127 Guided Missile Launcher.** The LAU-127 is a rail type missile launcher (Figure 2-16) that carries and launches the AIM-9 (Sidewinder) or AIM-120 (AMRAAM).

**2-119. MECHANICAL/ELECTRIC FUZES AND ACCESSORIES.** Fuzes are categorized as either mechanical or electric. Mechanical fuzes consist of an arming vane and a mechanism for arming the fuze. The arming vane is secured by an arming wire during carriage. When released, rotation of the arming vane provides the mechanical energy required to arm the fuze. When armed, the striker and detonator are aligned and the striker is free to be driven into the detonator. There are some variations to this sequence, but this fact holds true in most mechanical fuzes. Most electric fuzes function in the same manner. Operating energy to the fuze is provided from the aircraft fuze function control system by a cable assembly. A cable network in the weapon completes the system. DC voltage is applied to the fuze during the first few inches of weapon travel after release from the bomb rack. Other electrical fuzes may utilize an internal thermal battery or an initiator to provide operating voltage. Electrically actuated fuzes contain a mechanical safety system. The safety system consists of a pop-out pin (gag rod) that extends through a hole in the fuze electrical rotor. The pop-out pin prevents the rotor from turning and arming the fuze as long as a safety cotter pin or arming wire is installed in the pin.

**2-120. Arming Wires and Safety Clips.** Arming wires are used with arming devices, fuzes, explosive cutter devices, parachute devices, and weapons with retard fins. Arming wires are retained in fuzes and release devices by safety clips.

**2-121. Mk 32 Arming Device.** The Mk 32 arming device (Figure 2-17) is used in mine type weapons. The Arm/Safe condition is determined by the indication in the two observation windows of the device.

PHYSICAL CHARACTERISTICS:

Weight: 87 lb.  
Dimensions:  
Length: 111 in.  
Width: 4.187 in.  
Height: 5.4 in.

NOTE

LAU-7/A-6: 161353 THRU 163782  
LAU-7B/A: 163985 AND UP.

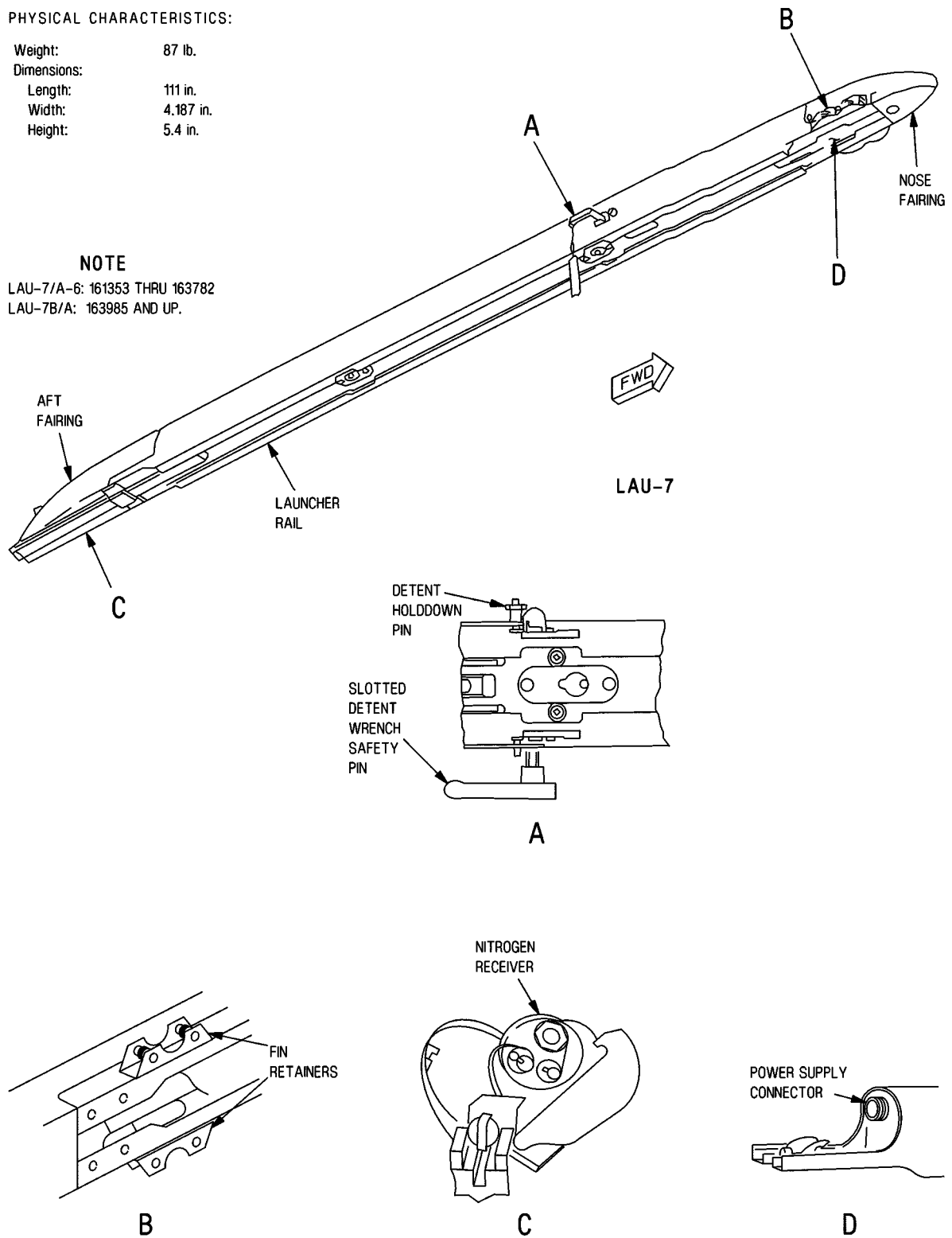
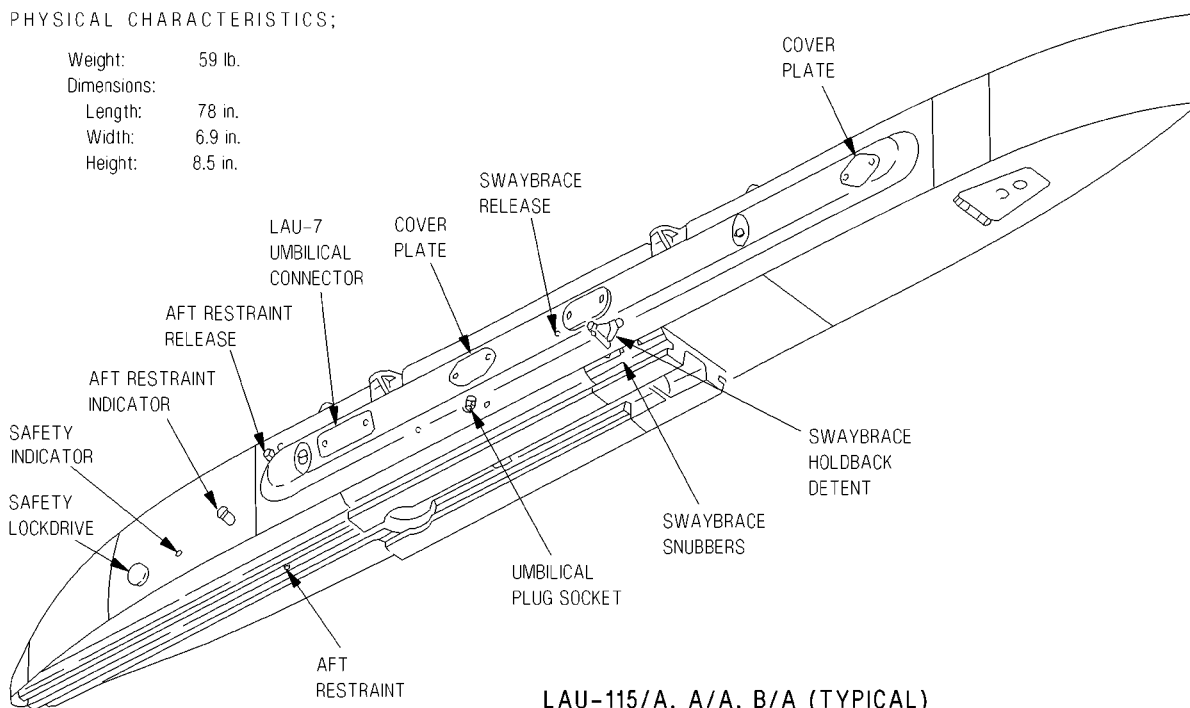


Figure 2-16. Launchers (Sheet 1 of 5)

**Description**

PHYSICAL CHARACTERISTICS;

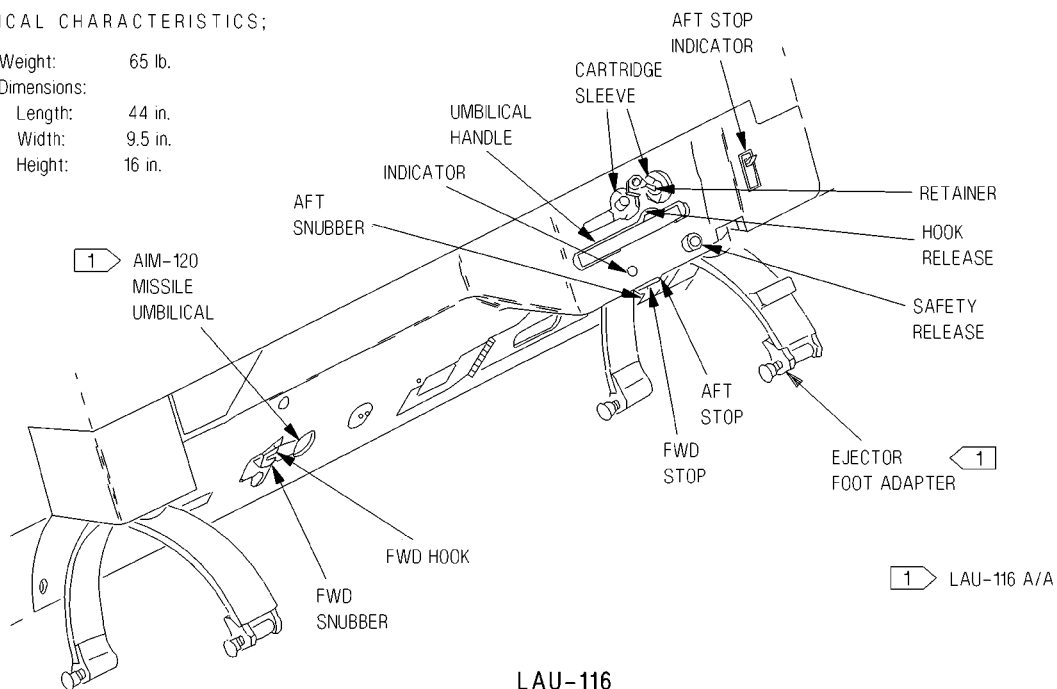
Weight: 59 lb.  
 Dimensions:  
 Length: 78 in.  
 Width: 6.9 in.  
 Height: 8.5 in.



LAU-115/A, A/A, B/A (TYPICAL)

PHYSICAL CHARACTERISTICS;

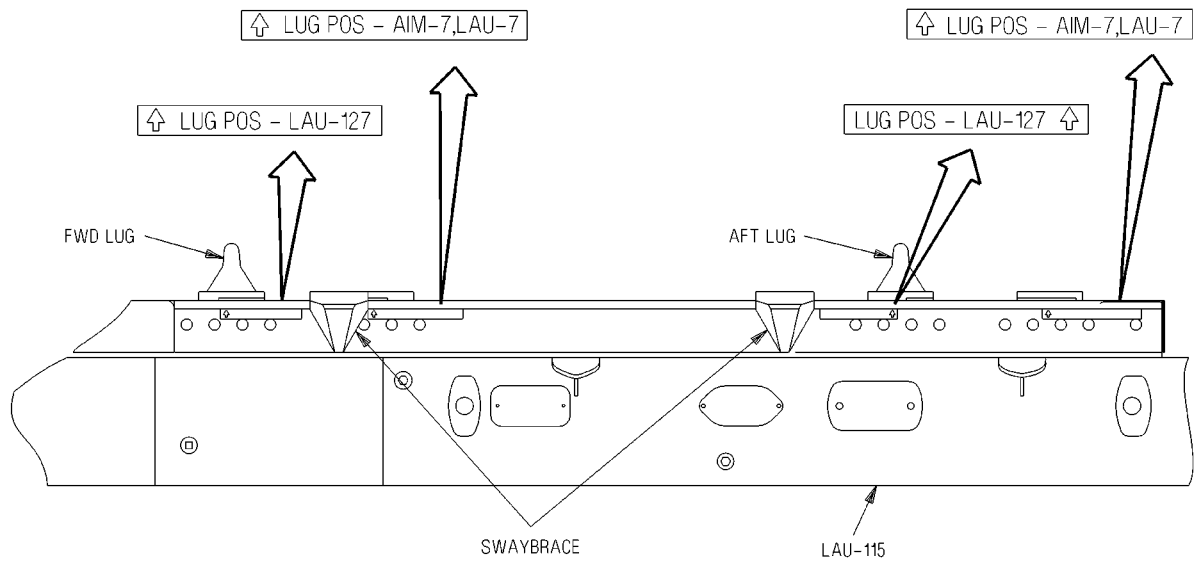
Weight: 65 lb.  
 Dimensions:  
 Length: 44 in.  
 Width: 9.5 in.  
 Height: 16 in.



LAU-116

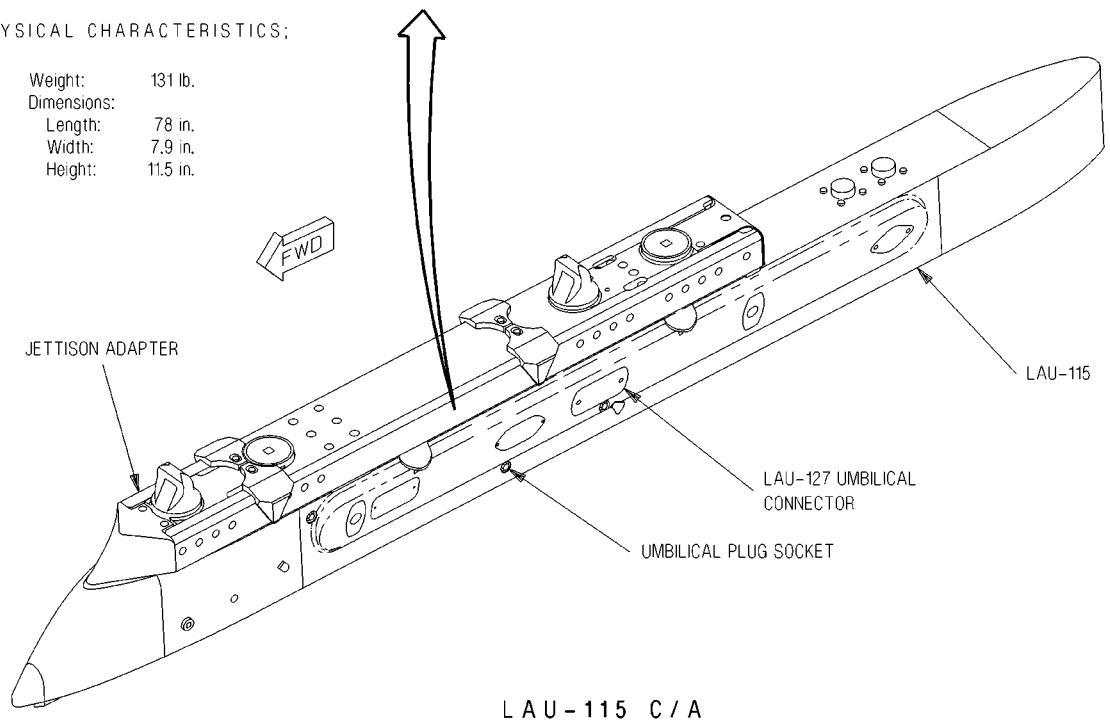
**Figure 2-16. Launchers (Sheet 2)**





**PHYSICAL CHARACTERISTICS:**

Weight: 131 lb.  
 Dimensions:  
 Length: 78 in.  
 Width: 7.9 in.  
 Height: 11.5 in.



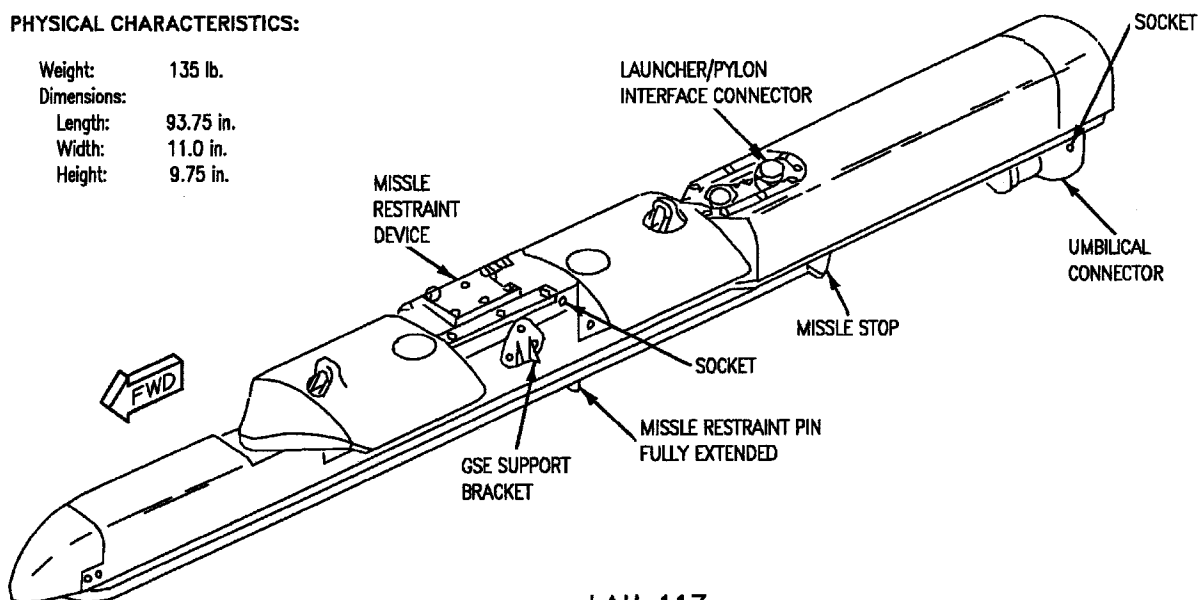
LAU-115 C/A

**Figure 2-16. Launchers (Sheet 3)**

Description

PHYSICAL CHARACTERISTICS:

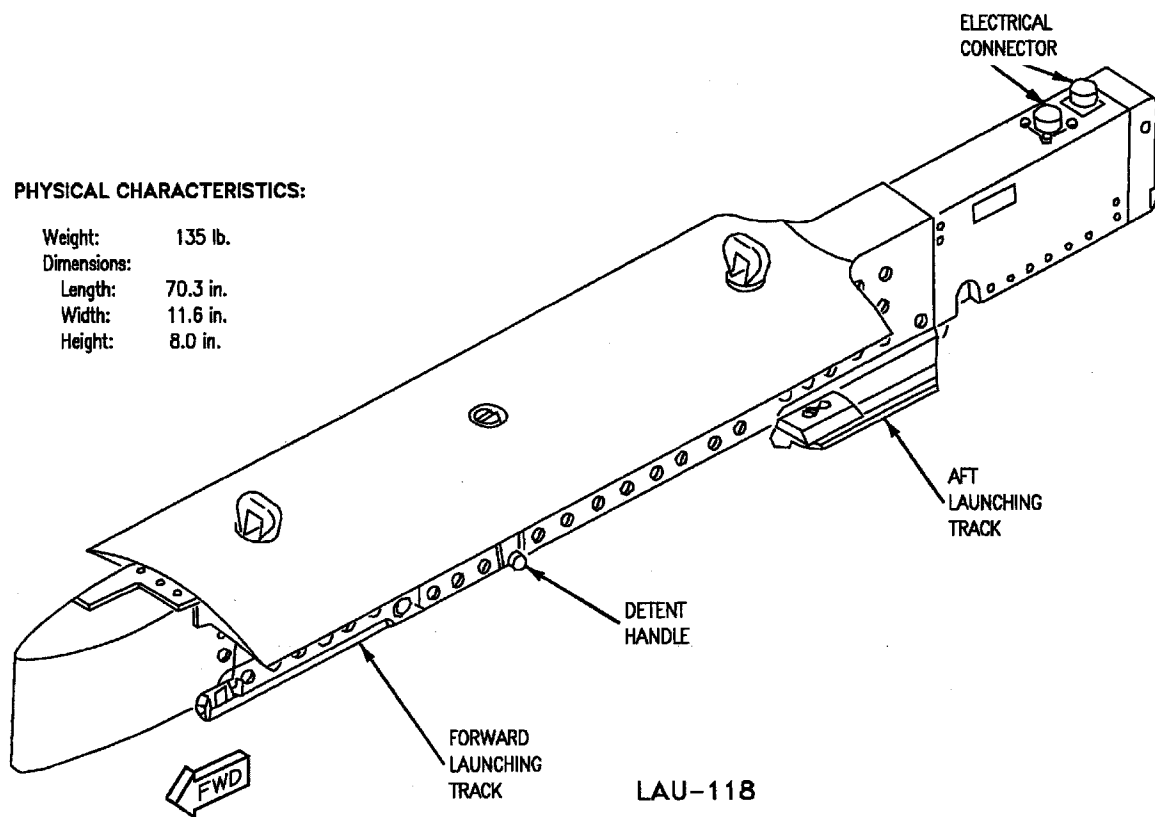
Weight: 135 lb.  
 Dimensions:  
 Length: 93.75 in.  
 Width: 11.0 in.  
 Height: 9.75 in.



LAU-117

PHYSICAL CHARACTERISTICS:

Weight: 135 lb.  
 Dimensions:  
 Length: 70.3 in.  
 Width: 11.6 in.  
 Height: 8.0 in.

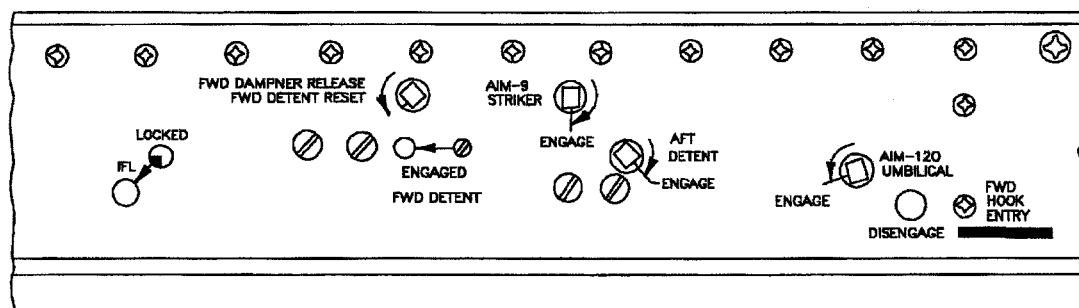
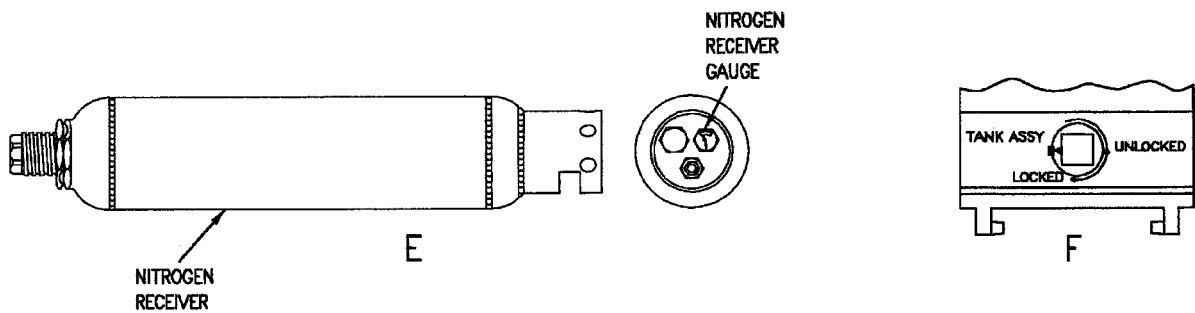
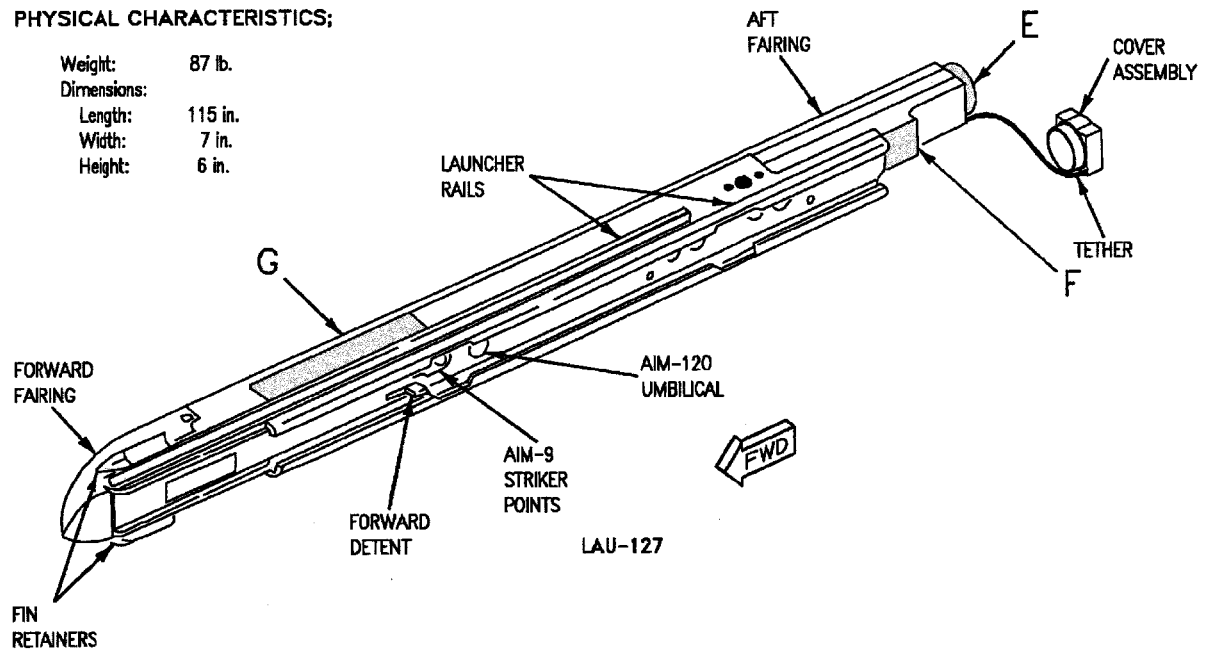


LAU-118

Figure 2-16. Launchers (Sheet 4)

PHYSICAL CHARACTERISTICS:

Weight: 87 lb.  
Dimensions:  
Length: 115 in.  
Width: 7 in.  
Height: 6 in.

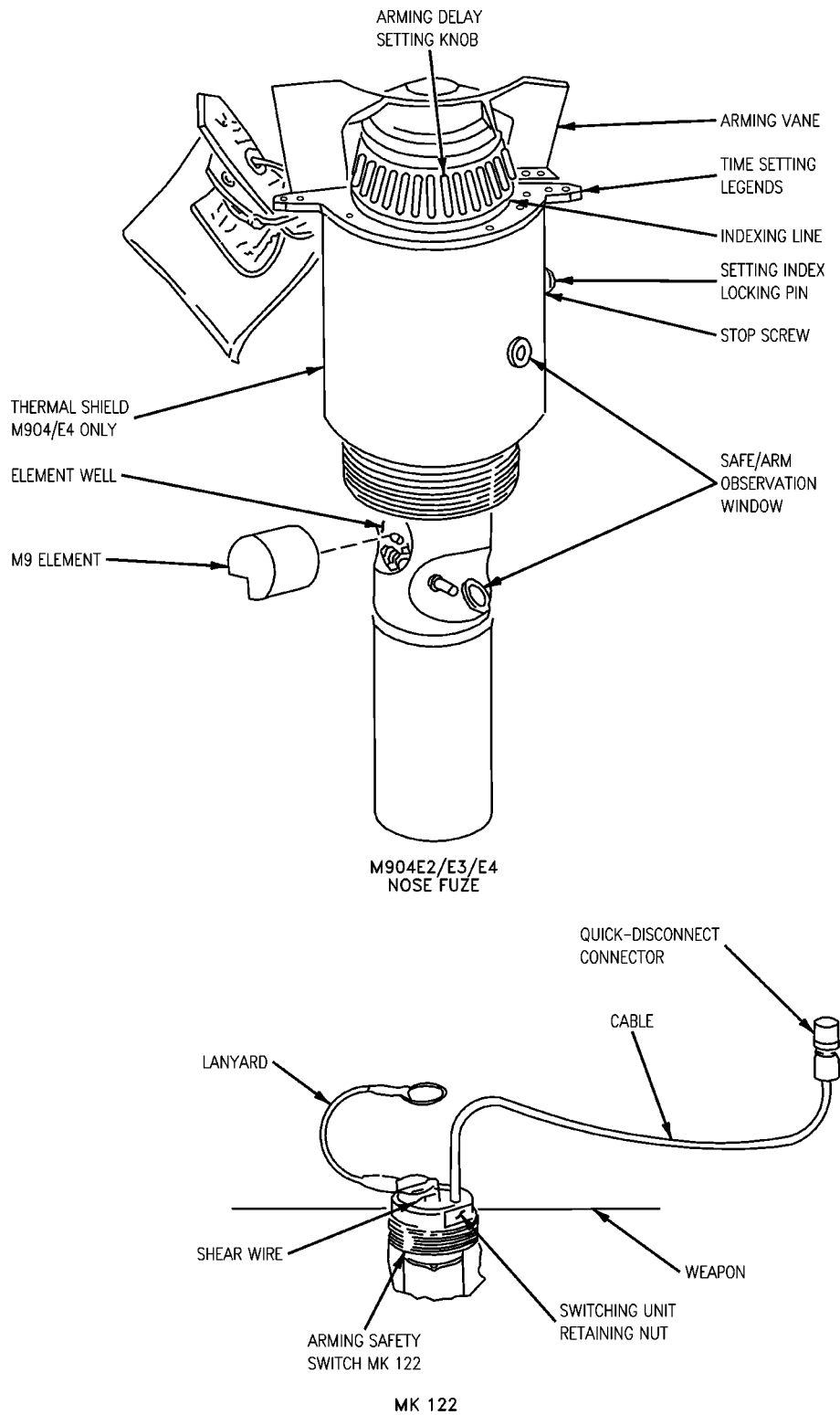


FORWARD INSTRUCTION PLATE

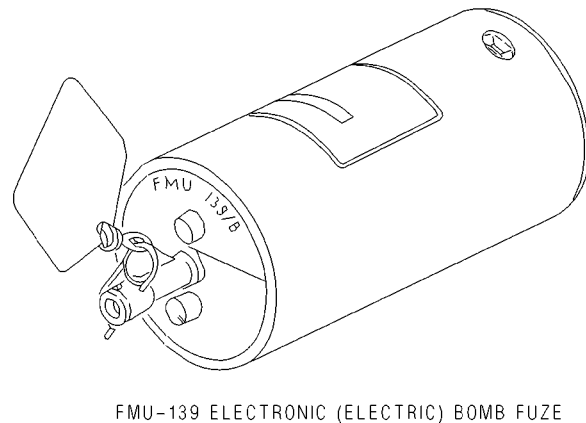
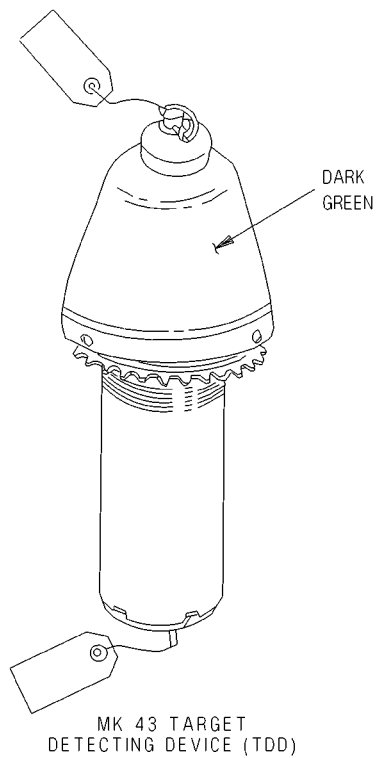
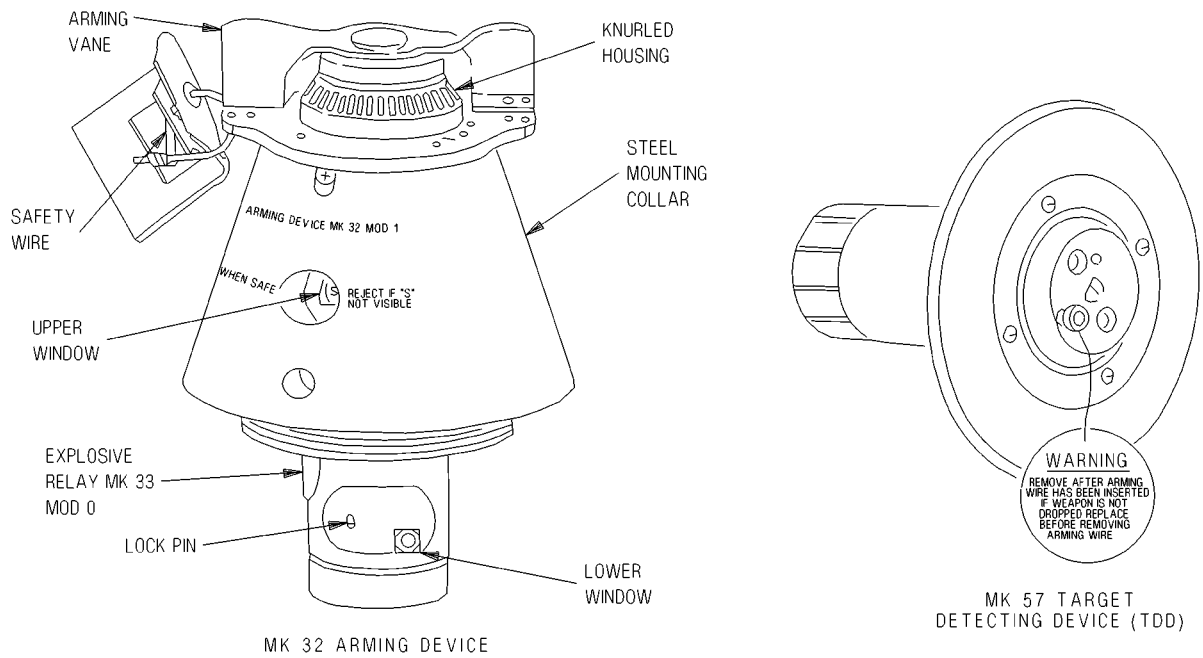
G

Figure 2-16. Launchers (Sheet 5)

**A1-F18AE-LWS-000**  
**Description**

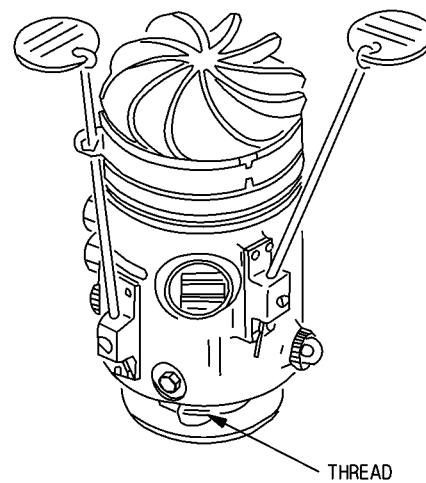
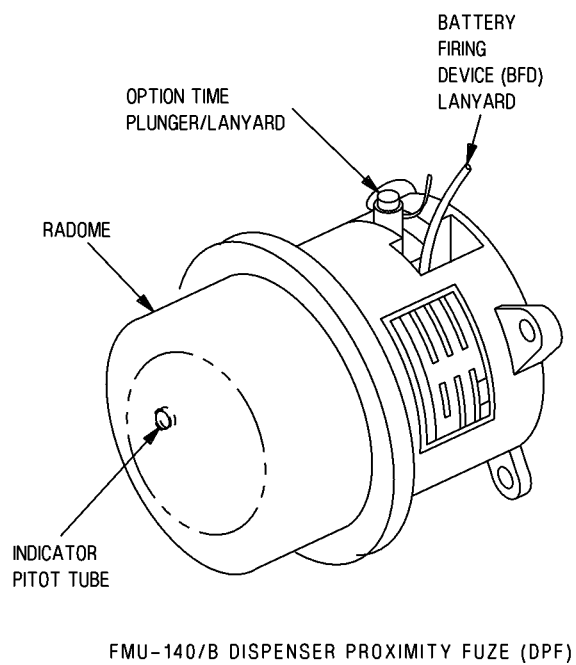


**Figure 2-17. Mechanical/Electric Fuzes and Accessories (Sheet 1 of 5)**



**Figure 2-17. Mechanical/Electric Fuzes and Accessories (Sheet 2)**

Description



NOTE

MK 376 IS USED WITH INERT MK 80 SERIES AND BDU-45 PRACTICE BOMBS ONLY

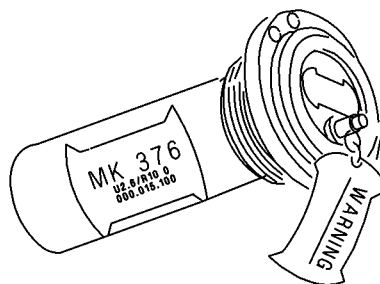
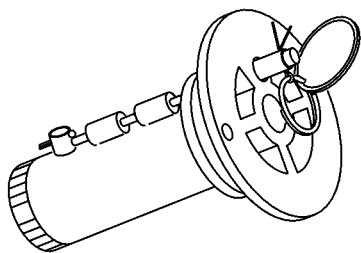
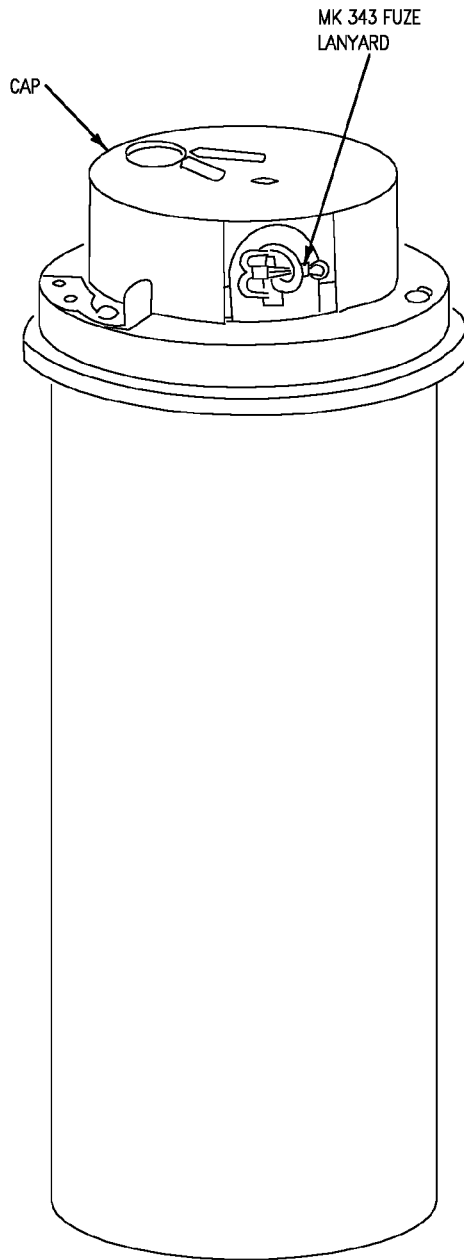


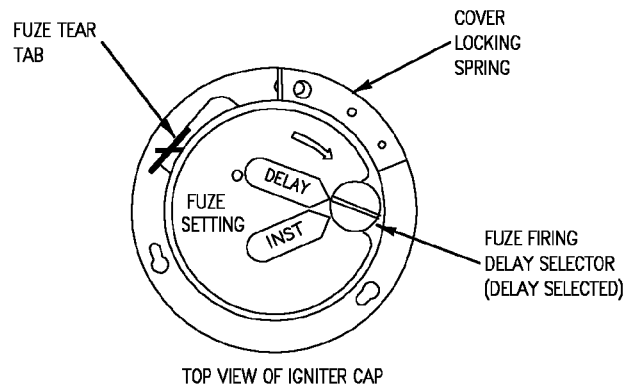
Figure 2-17. Mechanical/Electric Fuzes and Accessories (Sheet 3)

**PHYSICAL CHARACTERISTICS:**

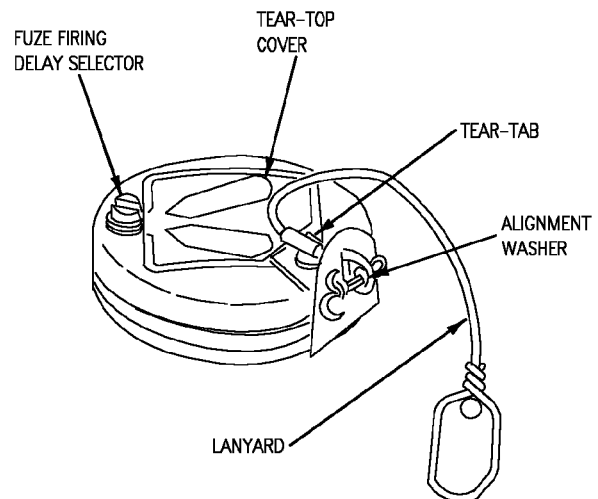
Dimensions;  
Length: 8.25 in.  
Width: 3.75 in.



INITIATOR MK 13 MOD 0



TOP VIEW OF IGNITER CAP



**Figure 2-17. Mechanical/Electric Fuzes and Accessories (Sheet 4)**

Description

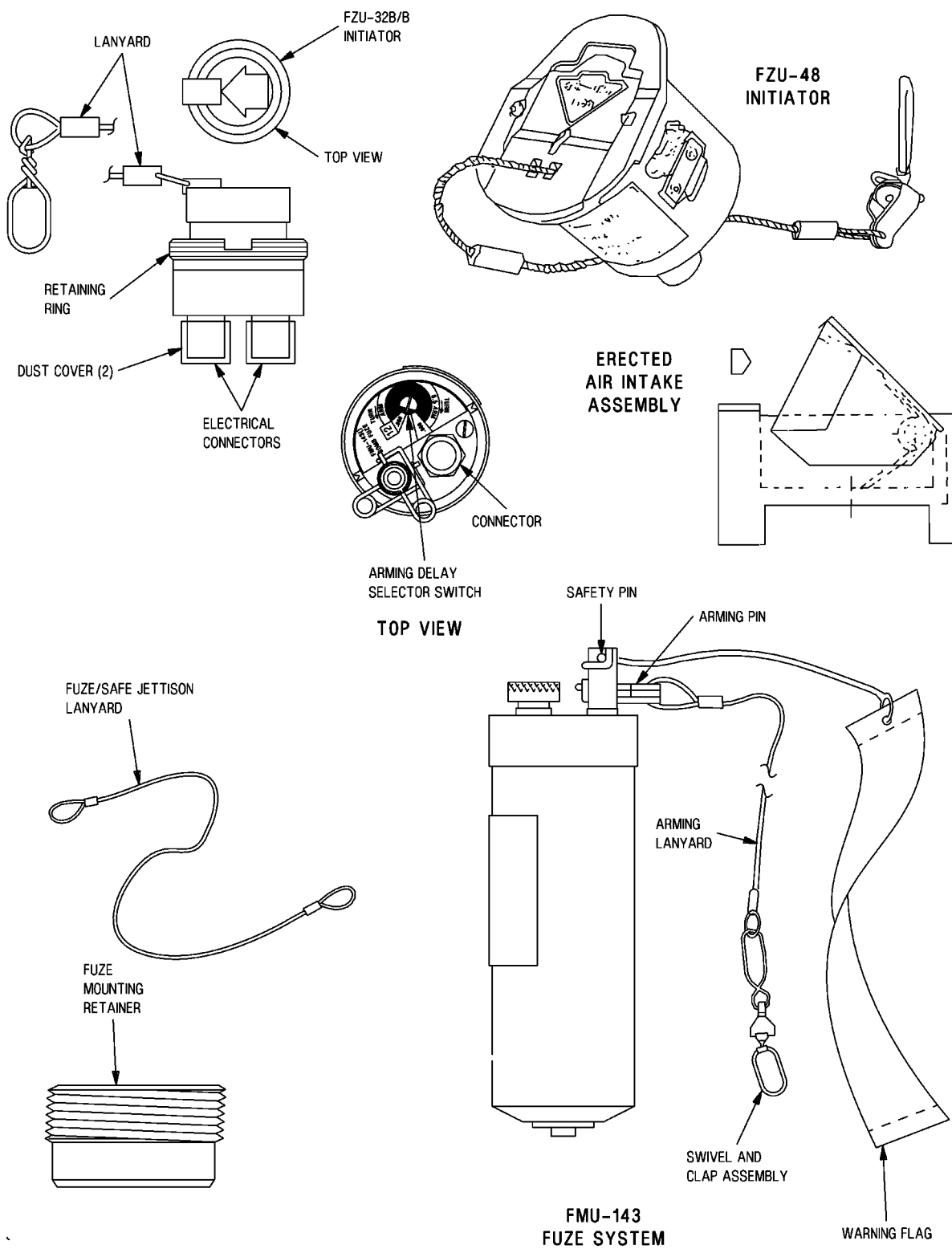


Figure 2-17. Mechanical/Electric Fuzes and Accessories (Sheet 5)



2-122. **Mk 57 Target Detecting Device.** The Mk 57 target detecting device (Figure 2-17) is used in mine type weapons. No Arm/Safe indications are provided. If the safety pin/arming wire is not installed in the pop-out pin, the target detecting device must be considered armed.

2-123. **Mk 43 Target Detecting Device.** The Mk 43 target detecting device (TDD) (Figure 2-17) is used to provide airburst capability for electrically fuzed retard or nonretard bombs. The TDD is nonexplosive, therefore Arm/Safe indications are not provided. If the safety clip or arming wire is not installed in the striker rod, the TDD must be considered a dud.

2-124. **DSU-33 Series Proximity Sensor.** The DSU-33 series proximity sensor (Figure 2-18) is a battery powered, Doppler radar proximity sensor used to function a free-falling bomb fuze such as the FMU-139 in low and high drag deliveries. The sensor has high resistance to ECM. The sensor provides a fire signal to the FMU-139 series, Mk 376, and FMU-152/B electronic fuze via the bomb fuze cables. As the bomb is released from the aircraft, the sensor receives a thermal battery initiation signal from the aircraft thru the Mk 122 arming safety switch. When the sensor senses that it has reached the preset height of burst (HOB) (20 feet nominal), a fire signal transmitter to the fuze causes detonation of the Mk 80/BLU series bombs. A battery inspection window is provided on the side of the DSU-33 to indicate battery status. If yellow appears, the battery has not been initiated. If black appears, the battery has been expended and the DSU-33 must be considered unserviceable. The DSU-33 sensor is also used in the GBU-31, 32, and 35 (JDAM) weapons.

2-125. **FMU-139 Electronic (Electric) Bomb Fuze.** The FMU-139 electronic (electric) bomb fuze (Figure 2-17) requires variable DC voltage for operation. Arm/Safe condition is verified by the presence of a safety pin through the pop-out pin (gag rod). The FMU-139 fuze is used in Mk 80, BLU series, general purpose and BDU-45 practice bombs.

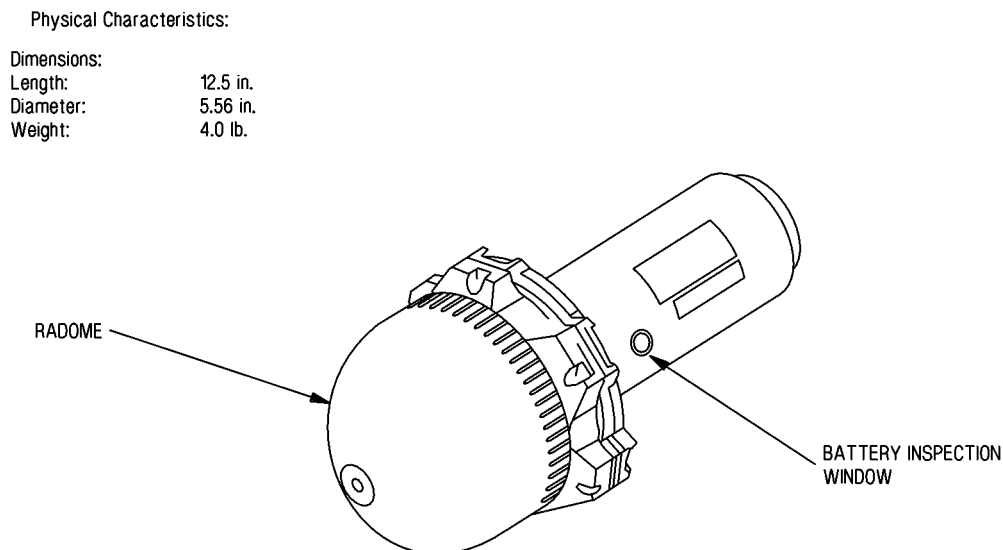


Figure 2-18. DSU-33 Series Proximity Sensor

## Description

**2-126. FMU-140 Dispenser Proximity Fuze (DPF).** The FMU-140 fuze (Figure 2-17) is mechanically initiated and thermal battery powered. Arm/Safe condition is verified by inspecting the extended indicator pitot tube. The fuze is to be considered armed if the red tipped indicator is visible.

**2-127. FMU-143 Electric Tail Fuze System.** The FMU-143 fuze (Figure 2-17) is initiated by the FZU-32B/B initiator, which is used to generate and supply power to arm the fuze. Safe condition is verified by the presence of a safety pin or arming wire through the pop-out pin (gag rod). The FMU-143 fuze is used in the GBU-24B/B.

**2-128. FMU-152 Electric Tail Fuze.** The FMU-152 fuze (Figure 2-19) can be initiated by either an external proximity sensor or the internal impact sensor. The safe condition is verified by the presence of a safety pin or arming wire through the pop-out pin (gag rod). The FMU-152 fuze is used in the GBU-31, 32, and 35 (JDAM) weapons.

**2-129. Mk 339 Mechanical Time Nose Fuze.** The Mk 339 mechanical time nose fuze (Figure 2-17) provides timed airburst fuzing for Cluster Bomb Units (CBUs) and dispensers. Arm/Safe condition is determined by observing indications in an observation window and presence of the safety pin or arming wire.

**2-130. Mk 376 Electric Tail Fuzes.** The Mk 376 electric tail fuze (Figure 2-17) requires variable DC voltage for operation. Arm/Safe condition is verified by the presence of a safety pin or arming wire through the pop-out pin. The Mk 376 fuze may be used for both retard and nonretard bombs. The Mk 376 is used only in inert Mk 80 series and BDU-45 practice bombs.

**2-131. M904 Series Mechanical Nose Fuze.** The M904 series mechanical nose fuze (Figure 2-17) provides fuzing for general purpose bombs. Arm/Safe condition is determined by observing indications in two

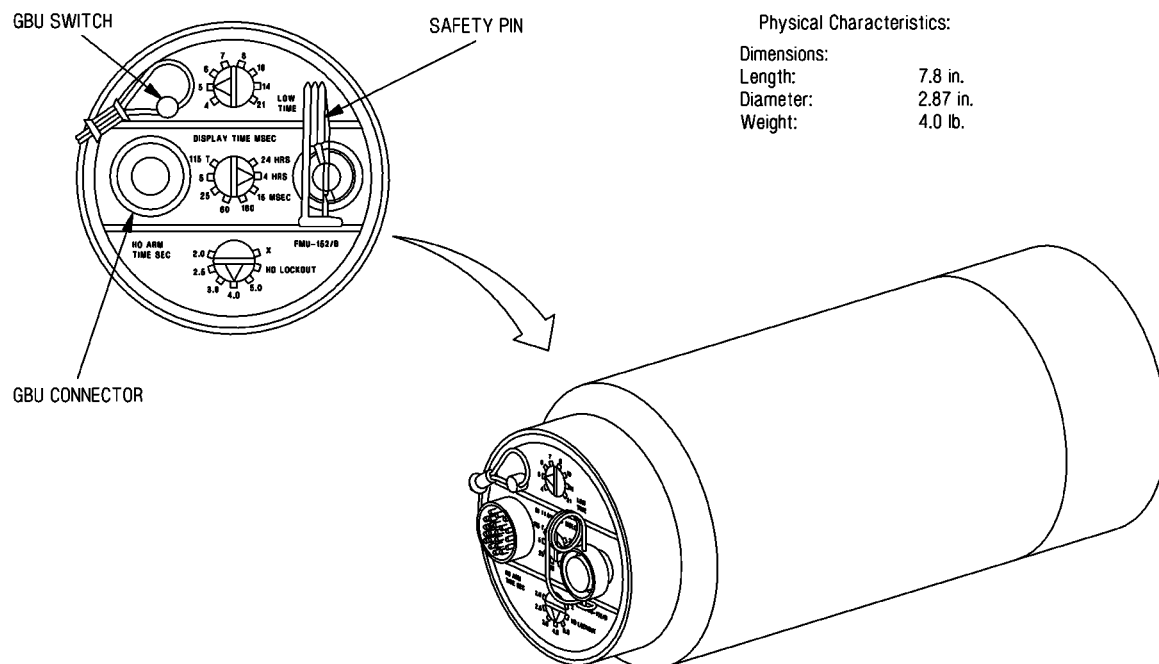


Figure 2-19. FMU-152/B Bomb Fuze

observation windows and the presence of safety wire or safety clip. The M904E3 and the M904E2 are identical, except the M904E3 has improved Arm/Safe indications and improved reliability against soft and very hard targets. The M904E4 is a thermally protected fuze, primarily intended for use with a thermally protected adapter booster in thermally protected bombs.

**2-132. Mk 122 Arming Safety Switch.** The Mk 122 arming safety switch (Figure 2-17) connects the bomb fuze control circuits in the aircraft to the electric fuze circuits in the bomb. This switch provides an open circuit and an electromagnetic radiation (RADHAZ) shield to prevent RADHAZ from entering the fuze circuits.

**2-133. Mk 89 Spotting Charge Adapter.** The Mk 89 spotting charge adapter (Figure 2-17) permits the use of signal cartridges in the tail fuze cavity of Mk 80 series and BDU-45 practice bombs. Safe condition is verified by the presence of a safety pin or arming wire through the pop-out pin.

**2-134. Mk 13 Mod 0 Initiator.** The Mk 13 Mod 0 Initiator (Figure 2-17) is designed to be used only with the Mk 77 Mod 4/5 firebomb, with one initiator installed in each filler hole. A tear top cover protects the arming vane from being released and the timing mechanism from actuating. If the tear top has been torn or lifted by any amount, the fuze will dud. If the tear top has pulled enough to allow the arming vane to extend, the initiator must be considered armed.

**2-135. FZU-32 Initiator.** The FZU-32 initiator (Figure 2-17) is a turbine generator installed into the charging well. It connects to the retractable cable from the tail fuze and provides AC power for fuze arming. A cover is removed by a lanyard after weapon release to allow a hinged air scoop intake to erect. Rushing air drives the turbine generator to deliver minimum electrical current. The AC voltage is converted in the fuze to DC voltage for arming circuits, firing the fuze rotor bellows motors, and detonator firing. The FZU-32 initiator is used with the GBU-24 and GBU-31(V)4/B (JDAM) weapons that utilize the BLU-109 bomb body.

**2-136. FZU-48 Initiator.** The FZU-48 initiator (Figure 2-17) is a cylindrical shaped metal component and is installed in the bomb charging well. It consists of a main housing with two electrical connectors and a cover assembly with a lanyard. Upon weapon release, the FZU-48 initiator's air scoop is pulled up into the airstream by the lanyard resulting in an application of rectified AC slipstream-generated electrical output to the fuze. The FZU-48 initiator is used with the GBU series weapons that utilize Mk 80 series bomb bodies.

**2-137. IMPULSE CARTRIDGES.** Impulse cartridges are normally used as a power source to impart force to and/or release objects. Impulse cartridges are generally initiated by the aircraft weapon release circuits.

**2-138. CXU-4/B Spotting Charge.** The CXU-4/B spotting charge (Figure 2-20) is a fire-free signal used with practice bomb BDU-45/B to provide visual indication of bomb impact point and fuze function.

**2-139. Practice Bomb Signal Cartridges, Mk 4 Mods, CXU-3/B, and CXU-3A/B.** The Mk 4 practice bomb signal cartridge (Figure 2-20) produces a flash of light and a white smoke puff. The CXU-3/B and CXU-3A/B practice bomb signal cartridge produces a dense white smoke display for day missions.

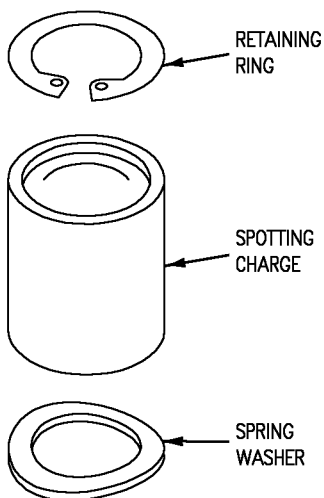
**2-140. CCU-63/B Impulse Cartridges.** The CCU-63/B or the Mk 131 impulse cartridge (Figure 2-20) provides a power source for the ejection of decoy flares.

**2-141. CCU-41/B Impulse Cartridges.** The CCU-41/B or MD 48 impulse cartridge (Figure 2-20) provides a power source for the ejection of chaff.

**Description**

**PHYSICAL CHARACTERISTICS:**

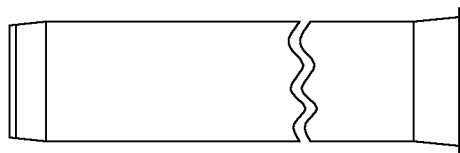
Dimensions:  
Length: 2.85 in.  
Diameter: 2 in.



**CXU-4/B SPOTTING CHARGE**

**PHYSICAL CHARACTERISTICS:**

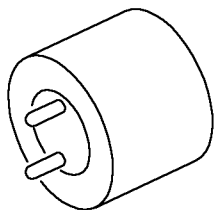
Length:  
Mk 4 Mods 5 in.  
CXU-3/B and 3 A/B 6 in.  
Diameter: 0.85 in.



**PRACTICE BOMB SIGNAL CARTRIDGE, MK 4 MODS, CXU-3/B, AND CXU-3A/B (TYPICAL)**

**PHYSICAL CHARACTERISTICS:**

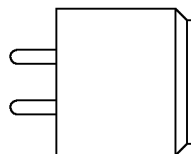
Dimensions:  
Length: .730 in.  
Diameter: .625 in.



**CCU-63/B IMPULSE CARTRIDGES (TYPICAL)**

**PHYSICAL CHARACTERISTICS:**

Dimensions:  
Length: .810 in.  
Diameter: .625 in.

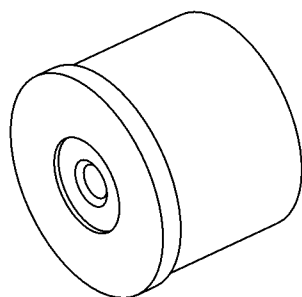


**CCU-41/B AND CCU-136/A IMPULSE CARTRIDGES (TYPICAL)**

**Figure 2-20. Impulse Cartridges/Spotting Charges/Signal Cartridges (Sheet 1 of 2)**

**PHYSICAL CHARACTERISTICS:**

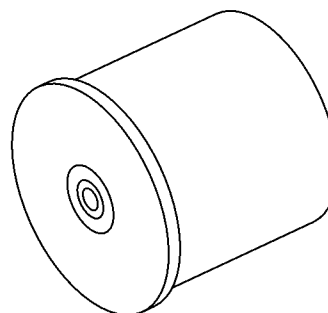
Dimensions:  
 Length: 1.100 in.  
 Diameter: 1.080 in.



**CCU-44/B IMPULSE CARTRIDGE**

**PHYSICAL CHARACTERISTICS:**

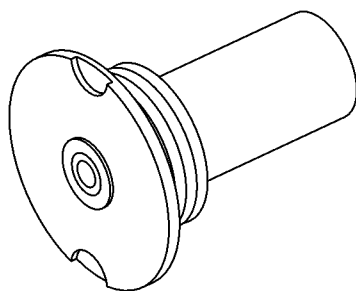
Dimensions:  
 Length: 1.470 in.  
 Diameter: 1.080 in.



**CCU-45/B IMPULSE CARTRIDGE**

**PHYSICAL CHARACTERISTICS:**

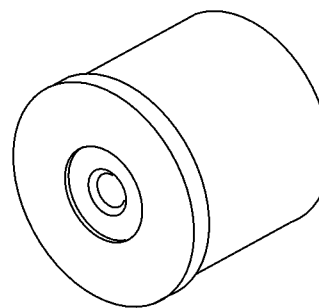
Dimensions:  
 Length: 1.471 in.  
 Diameter: .805/.536 in.



**MK 19 MOD 0 IMPULSE CARTRIDGE**

**PHYSICAL CHARACTERISTICS:**

Dimensions:  
 Length: 1.000 ± .025 in.  
 Diameter: 1.000 in.



**CCU-107/B IMPULSE CARTRIDGE**

**Figure 2-20. Impulse Cartridges/Spotting Charges/Signal Cartridges (Sheet 2)**

**Description**

2-142. **CCU-136/A Impulse Cartridge.** The CCU-136/A impulse cartridge (Figure 2-20) provides a power source for the ejection of decoy flares and chaff. The CCU-136/A is a replacement cartridge for the CCU-63/B and CCU-41/B.

2-143. **CCU-44/B Impulse Cartridge.** The CCU-44/B impulse cartridge (Figure 2-20) provides a power source for ejection of weapons/stores from various racks.

2-144. **CCU-45/B Impulse Cartridge.** The CCU-45/B impulse cartridge (Figure 2-20) provides a power source for ejection of weapons/stores from various racks.

2-145. **CCU-107/B Impulse Cartridge.** The CCU-107/B impulse cartridge (Figure 2-20) provides a power source for ejection of weapons/stores from various racks.

2-146. **Mk 19 Mod 0 Impulse Cartridge.** The Mk 19 Mod 0 impulse cartridge (Figure 2-20) provides a power source for auxiliary ejection of weapons/stores from the BRU-32 bomb rack.

**2-147. WEAPONS/STORES.**

2-148. The following weapons/stores data are intended to provide ordnance personnel with a brief description of weapons/stores. Detailed information is available in publications referenced in Table 1-1.

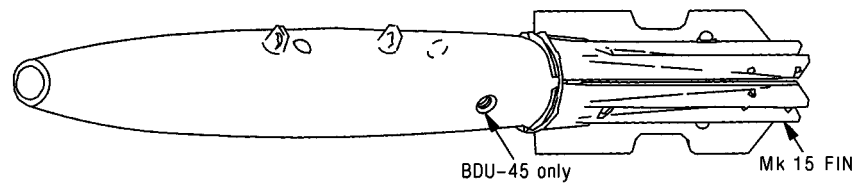
2-149. **RETARD/NONRETARD WEAPONS.** Retard/nonretard weapons are freefall weapons. The retard weapon employs a tail device to slow its descent. The nonretard weapon employs a tail assembly for trajectory stabilizing purposes.

2-150. **Mk 80/BLU Series and BDU-45 Bombs.** The Mk 80/BLU series bombs (Figure 2-21) have slender aerodynamic bodies. The Mk 82/BLU 111 and 83/BLU 110 can be delivered in the retard or nonretard mode. The Mk 84/BLU-117 can only be delivered nonretard. The Mk 80/BLU series bombs use VT, mechanical, or electric fuzes. Mechanical fuzes require the installation of adapter boosters, which are not used with VT and electric fuzes. Electric fuzes require installation of the Mk 122 arming safety switch. The Mk 83/BLU 110 and 84/BLU-117 nonretard bombs use conical fins. The Mk 82/BLU 111 nonretard bomb uses the BSU-33 fin. The Mk 82/BLU 111 and 83/BLU 110 retard bombs use either Mk 15/BSU-85/86 fins. These fins were designed to provide the aircraft with a low level, high speed bombing capability. The fin release mechanism is mechanical and is actuated by an arming wire/lanyard as the bomb falls away from the aircraft. When released, the Mk 15/BSU-86 fins expand into four dive brake flaps that stabilize and decelerate the bomb by creating high drag, thereby decreasing the speed of the bomb and allowing the aircraft to avoid the bomb blast and fragment pattern. The BSU-85 fin operates on the same principle but uses an air inflatable retarder instead of four dive brake flaps. The BDU-45/B practice bomb is designed to simulate Mk 82 GP bombs in low/high drag configurations. It is identical to the Mk 82GP with the exception of an inert filler and provisions for spotting charges for target impact spotting/fuze functioning indications.

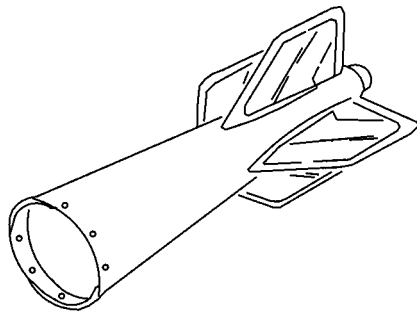
2-151. **Cluster Bomb Units (CBUs).** CBUs are weapons that dispense smaller weapons over a large area. The method of dispensing provides for release of the entire CBU which separates, by fuzing action, at a prescribed altitude. The smaller weapons are scattered when the CBU separates.

2-152. **Mk 20 Mods, CBU-99/CBU-100 Antitank Bomb Cluster (BC).** The Mk 20 Mods antitank bomb cluster (Figure 2-22) is a free-fall, folding fin airburst weapon. The bomb consists of a Mk 7 Mod 2 bomb dispenser loaded with Mk 118 Mod 0/1 antitank bombs and a Mk 339 mechanical time fuze or FMU-140 dispenser proximity fuze. The bomb cluster is delivered to operating activities completely assembled with 14-inch suspension lugs, arming wires, extractors, fuze, and a removable fuze protective cover installed. Fins are held in the folded position with a fin retaining band, secured by an arming wire and a ground handling safety

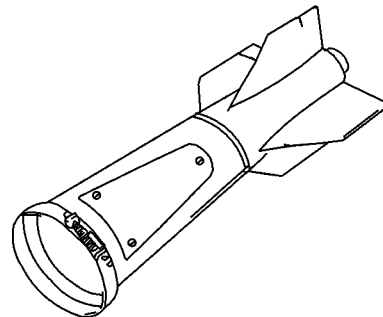
PHYSICAL CHARACTERISTICS:	Mk 82/BLU 111/BDU-45	Mk 83/BLU 110	Mk 84/BLU 117
CONICAL	N/A	971 lb.	1970 lb.
Mk 15	560 lb.	N/A	N/A
BSU-33	527 lb.	N/A	N/A
BSU-85	N/A	1006 lb.	N/A
BSU-86	566 lb.	N/A	N/A
DIMENSIONS:			
Diameter:	11 in.	14 in.	18 in.
SUSPENSION PROVISIONS:	14 in.	14 in.	30 in.



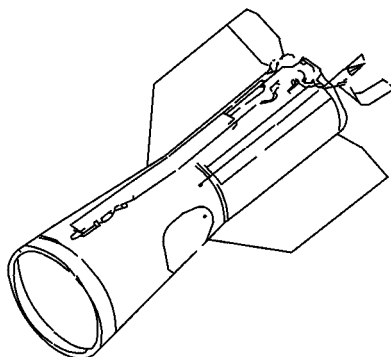
Mk 80 SERIES/BLU SERIES/BDU-45/B Bomb (Typical)



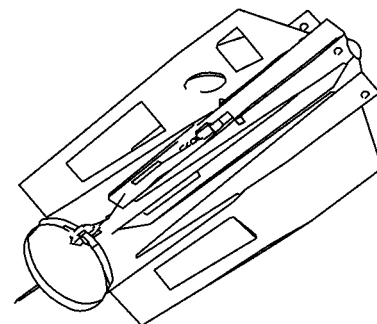
CONICAL FIN ASSEMBLY  
(Mk 83/BLU 110)  
(Mk 84/BLU 117)



BSU-33 FIN ASSEMBLY  
(Mk 82/BLU 111/BDU-45 only)



BSU-85 AIR INFLATABLE  
RETARDER (Mk-83/BLU 110 only)



BSU-86 FIN ASSEMBLY  
(Mk 82/BLU 111/BDU-45 only)

**Figure 2-21. Mk 80/BLU Series General Purpose Bombs and BDU-45 with Associated Fins**

## A1-F18AE-LWS-000

### Description

pin. When the ground handling safety pin and arming wire are removed, the spring loaded fins open to a 34.2-inch span. The bomb cluster contains an in-flight fuze option and requires an option time wire and extractor and a fuze setting observation window. The Mk 20 Mod 11, 12 weapon uses the Mk 339 fuze and has fin and fuze tethers incorporated to retain release bands when the weapon is released. The Mk 20 Mod 9 weapon uses the FMU-140 dispenser proximity fuze and fin tether only. Mk 20 Mods 9/11/12 after AWC-372 are redesignated as CBU-99A/B, CBU-100A/B, CBU-99/B, and CBU-100/B.

**2-153. PDU-5/B.** The PDU-5/B leaflet bomb (Figure 2-22) is a free-fall, folding fin, airburst cluster-type dispenser. The dispenser consists of an SUU-76 bomb dispenser loaded with leaflet material and a Mk 339 mechanical time fuze. The PDU-5/B is delivered to operating activities completely assembled with 14-inch suspension lugs, arming wires, extractors, fuze, and a removable fuze protective cover installed. Fins are held in the folded position with a fin retaining band secured by an arming wire and ground handling safety pin. When the ground handling safety pin and arming wire are removed, the spring-loaded fins open to a 34.2-inch span. The leaflet dispenser contains an in-flight fuze option that requires the use of an option time wire and extractor and has a fuze observation window for verifying fuze settings and fuze safety. The dispenser has fin and fuze tethers incorporated to retain release bands when the dispenser is released.

**2-154. CBU-78/B (Gator).** The CBU-78/B is an antipersonnel/antitank, free-fall folding-fin, airburst weapon (Figure 2-23). The weapon consists of an SUU-58 dispenser loaded with BLU-91/B and BLU-92/B mines and Mk 339 mechanical (nose) fuze. The weapon is delivered to operating activities completely assembled with 14-inch suspension lugs, arming wire extractors, and a removable fuze cover installed. Fins are held in the folded position with a fin retaining band, secured by an arming wire and a ground handling safety pin.

**2-155. FIRE BOMBS.** Fire bombs are aerodynamically shaped containers that carry a fuel gel.

#### PHYSICAL CHARACTERISTICS:

Weight:	490-505 lb.
Dimensions:	
Length:	92 in.
Diameter:	13.2 in.
Suspension Provisions:	14 in.

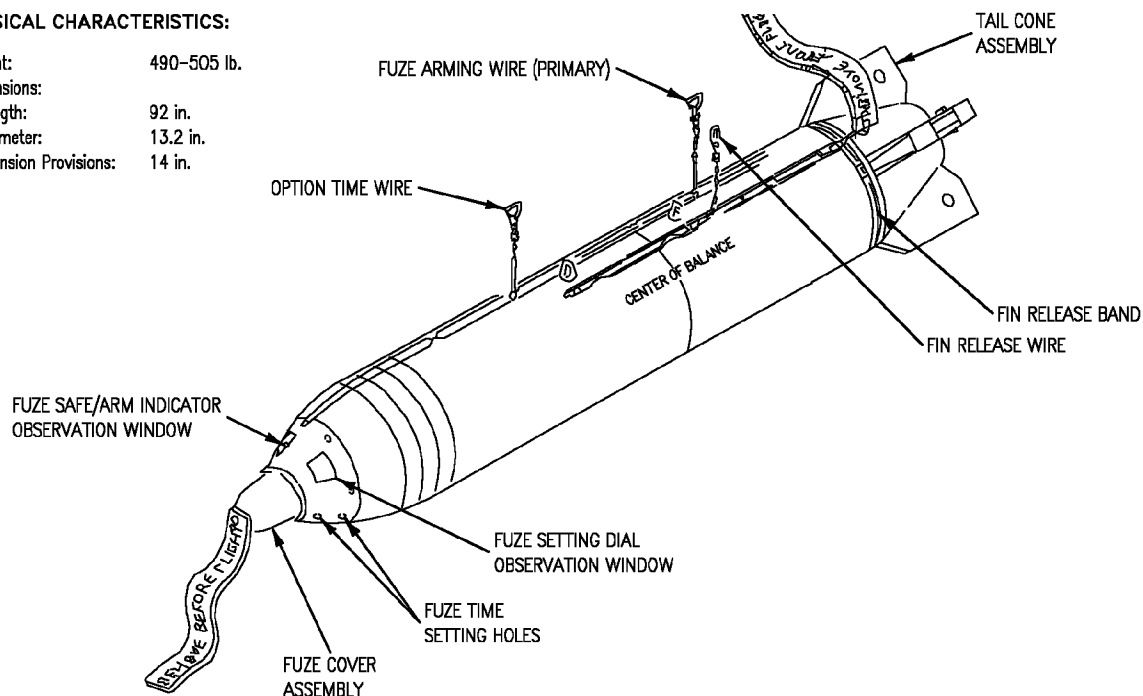


Figure 2-22. Mk 20 Mods/CBU-99/CBU-100 Antitank Bomb Cluster and PDU-5/B



2-156. **Mk 77 Mod 4/5 Fire Bomb.** The Mk 77 Mod 4/5 fire bomb (Figure 2-24) is a thin skinned unstablized container filled with 71 gallons of gelled fuel. It tumbles, impacts, and ruptures in a trajectory, which maximizes dispersal. Mk 13 initiators installed in the filler holes are used to ignite the combustible filling. The Mod 4 uses caustic gel; the Mod 5 uses pre-filled imbiber beads. There is no change in weapon loading or characteristics.

2-157. **AIR-LAID MINES.** Air-laid mines are classified as mines dropped by any air vehicle. Drill mines are inert service mines used for training purposes and are recoverable.

2-158. **Mk 52 Mine.** The Mk 52 mine (Figure 2-25) is an air-laid bottom mine. Each mine is fitted with a high speed nose fairing and a high speed fin for drop stability. Two suspension lugs are attached to the mine case. Each mine uses a parapak that is designed to slow descent and reduce impact when the mine enters the water. A control unit, activated by a single arming wire, opens the parapak. Each mine is equipped with an arming device. A double arming wire is employed on the extender and the hydrostatic switch pistons of the arming device. The mine is equipped with a firing system that responds either singly or in combination to the acoustic, magnetic, and/or pressure influence of a passing ship.

2-159. **Mk 55 Mine.** The Mk 55 mine (Figure 2-26) is an air-laid bottom mine. The mine is fitted with a high speed nose fairing and high speed fin for drop stability. The mine is suspended from the aircraft with two suspension lugs. Each mine uses a parapak that is designed to slow descent and reduce impact when the mine enters the water. A control unit, activated by a single arming wire, opens the parapak. The mine is equipped with an arming device. A double arming wire is used on the extender and hydrostatic switch. The mine is equipped with a firing system that responds either singly or in combination to the acoustic, magnetic, and/or pressure influence of a passing ship.

#### PHYSICAL CHARACTERISTICS

Weight:	516 lb.
Dimensions:	
Length:	92 in.
Diameter:	13.2 in.
Suspension Provisions:	14 in.

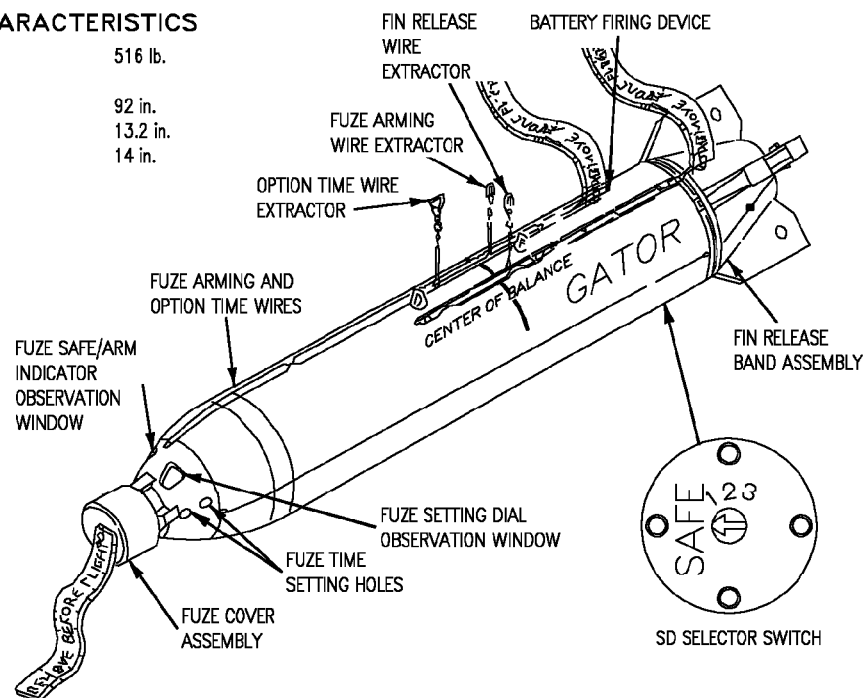
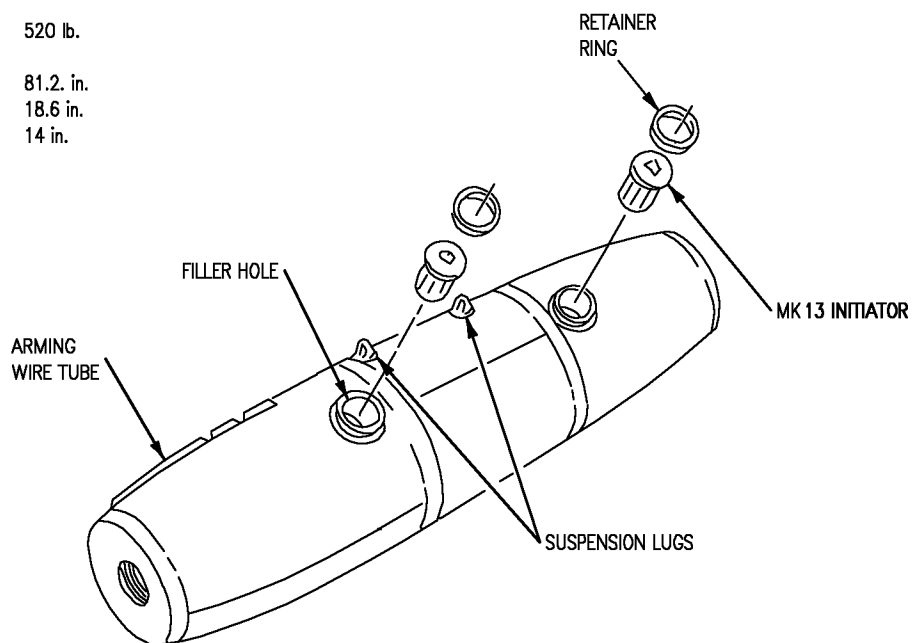


Figure 2-23. CBU-78/B (Gator) Antipersonnel/Antitank

**Description**

**PHYSICAL CHARACTERISTICS:**

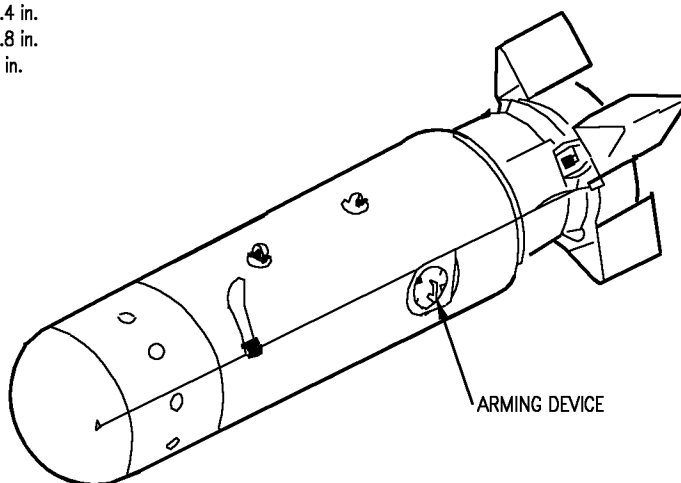
Weight:	520 lb.
Dimensions:	
Length:	81.2 in.
Width:	18.6 in.
Suspension Provisions:	14 in.



**Figure 2-24. Mk 77 Mod 4/5 Fire Bomb**

**PHYSICAL CHARACTERISTICS:**

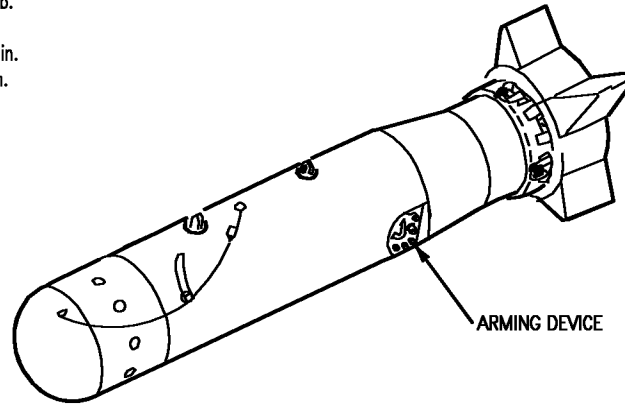
Weight:	1243 lb.
Dimensions:	
Length:	89.4 in.
Diameter:	18.8 in.
Suspension Provisions:	14 in.



**Figure 2-25. Mk 52 Mine**

**PHYSICAL CHARACTERISTICS:**

Weight:	2194 lb.
Dimensions:	
Length:	114.6 in.
Diameter:	23.6 in.
Suspension Provisions:	30 in.



**Figure 2-26. Mk 55 Mine**

2-160. **Mk 56 Mine.** The Mk 56 mine (Figure 2-27) is an air-laid moored mine. Two suspension lugs are attached to the mine case. Each mine is fitted with a high speed nose fairing and a high speed fin for drop stability. The Mk 56 mine employs a parapak to slow descent and reduce impact when the mine enters the water. A control unit, activated by a single control wire, opens the parapak. The mine is armed by an extender and a hydrostatic switch, which are controlled by a double arming wire. The mine is equipped with an anchor that separates from the mine and to which the mine remains moored at a predetermined distance beneath the surface of the water. The Mk 56 firing system responds to the magnetic influence of passing ships.

2-161. **Mk 62 Mine.** The Mk 62 mine (Figure 2-28) is a 500-pound, air-laid, all modular, influence-actuated, bottom mine for use against submarines and surface targets. The Mk 62 mine consists of a Mk 82/BLU 111 bomb case, a Mk 32 arming device, a Mk 57 target detecting device, and a Mk 15, BSU-86 fin or Mk 16 tail section.

2-162. **Mk 63 Mine.** The Mk 63 mine (Figure 2-28) is a 1000-pound, air-laid, all modular, influence-actuated, bottom mine for use against submarines and surface targets. The Mk 63 mine consists of a Mk 83/BLU 110 bomb case, a Mk 32 arming device, a Mk 57 target detecting device, and a Mk 12 tail section or a MAU-91A/B fin.

2-163. **Mk 65 Mine.** The Mk 65 mine (Figure 2-29) is a 2000-pound air-laid, all modular, influence-actuated, bottom mine for use against submarines and surface targets. The Mk 65 mine consists of a Mk 65 mine case, a Mk 45 safety device arming group with a Mk 2 arming device, a Mk 57 target detecting device, and a Mk 7 tail assembly.

## Description

### PHYSICAL CHARACTERISTICS:

Weight: 2215 lb.  
 Dimensions:  
 Length: 138 in.  
 Diameter: 23.6 in.  
 Suspension Provisions: 30 in.

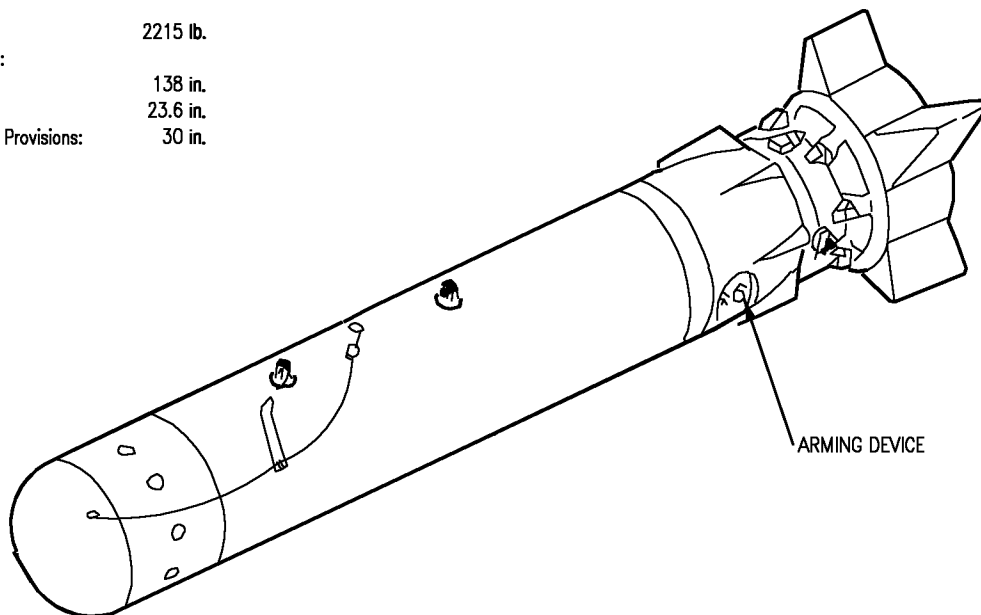


Figure 2-27. Mk 56 Mine

### PHYSICAL CHARACTERISTICS:

	MK 62	MK 63
Weight:	565 lb.	1011-1069 lb.
Dimensions:		
Length:	90 in.	110-113 in.
Diameter:	11 in.	14.5 in.
Suspension Provisions:	14 in.	14 in.

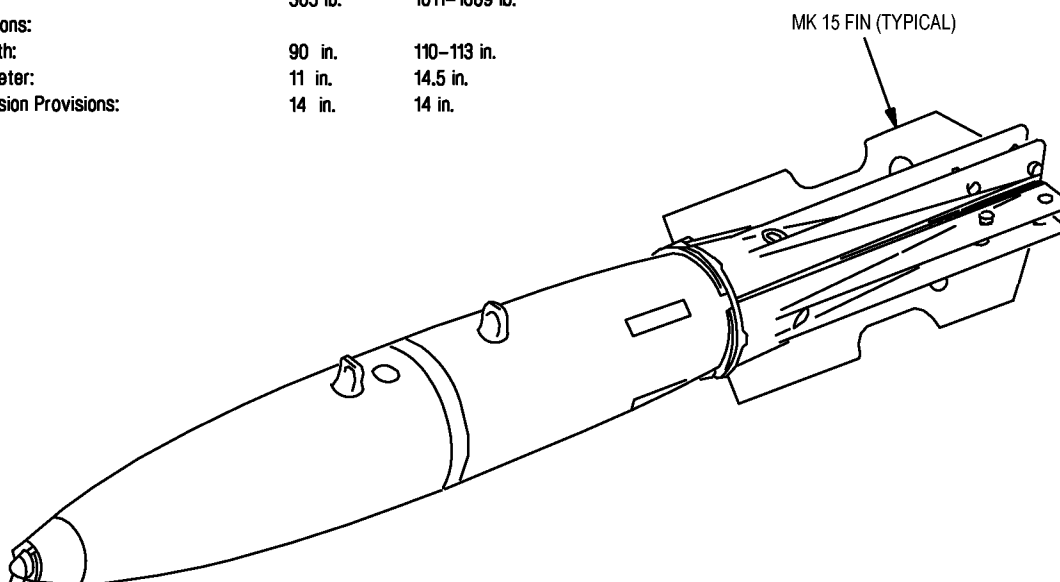
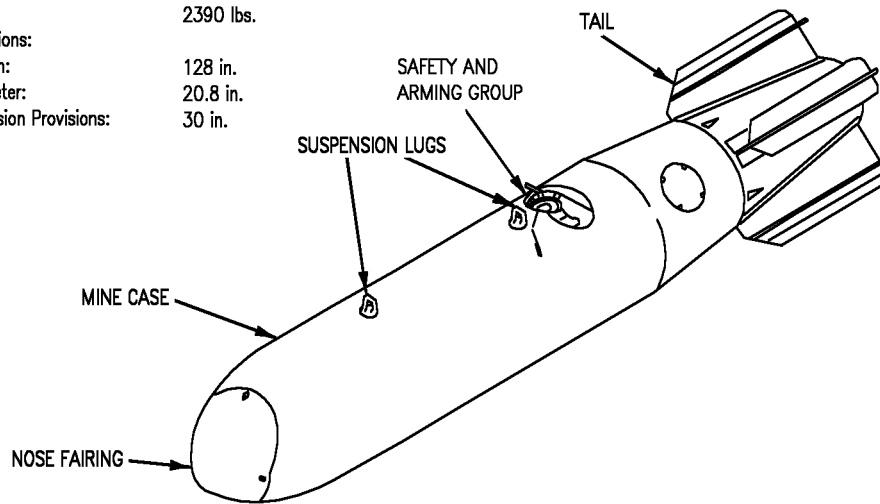


Figure 2-28. Mk 62/63 Mine

**PHYSICAL CHARACTERISTICS:**

Weight:	2390 lbs.
Dimensions:	
Length:	128 in.
Diameter:	20.8 in.
Suspension Provisions:	30 in.



**Figure 2-29. Mk 65 Mine**

2-164. **GLIDE WEAPONS.** Glide weapons have no propulsion, but have a guidance control unit.

2-165. **Guided Bomb Units (GBU-10/-12/-16).** Guided bomb units (Figure 2-30) are Mk 80/BLU series bombs modified to detect a target illuminated by a laser beam. The bomb consists of a Mk 80/BLU series bomb body and a guidance kit. The guidance kit contains a computer-control group (CCG) and an airfoil group (wing assembly and guidance fins). The CCG and guidance fins are mounted on a forward adapter assembly on the front of the bomb and provide target detection and weapon guidance. The wing assembly is mounted aft, and folding wings extend upon release from the aircraft. The guidance fins are attached to the CCG to control direction of flight of the weapon.

2-166. **Guided Bomb Unit (GBU-24B/B).** The GBU-24B/B (Figure 2-30) is a thermally protected, hardened target penetrator laser guided bomb. The bomb consists of a BLU-109A/B bomb body, CCG wing assembly and guidance fins. The CCG and guidance fins are mounted on a forward adapter assembly on the front of the bomb and provide target detection and weapon guidance. The wing assembly is mounted aft, and folding wings extend upon release from the aircraft. The guidance fins are attached to the CCG to control direction of flight of the weapon. A strong-back assembly provides a method of attaching the weapon to the aircraft bomb racks and houses the FZU-32B/B initiator, which provides arming voltage to the FMU-143E/B electric tail fuze.

2-167. **Joint Direct Attack Munition (GBU-31 Series).** The Joint Direct Attack Munition (JDAM) series (Figure 2-31) consists of Mk 80/BLU series bombs with a JDAM kit installed. The kit consists of strakes, which increase the release envelope, a tail section that houses a Global Positioning System, an Inertial Measurement Unit, flight controls, and a common 1760 aircraft interface.

Description

PHYSICAL CHARACTERISTICS:	GBU-12B/B	GBU-16/B	GBU-10C/B	GBU-24B/B
Weight:	610.5 lb.	1110 lb.	2081.6 lb.	2348.3 lb.
Dimensions:				
Length:	131 in.	145 in.	170 in.	170 in.
Diameter:	11 in.	14 in.	18 in.	16 in.
Suspension Provisions:	14 in.	14 in.	30 in.	30 in.

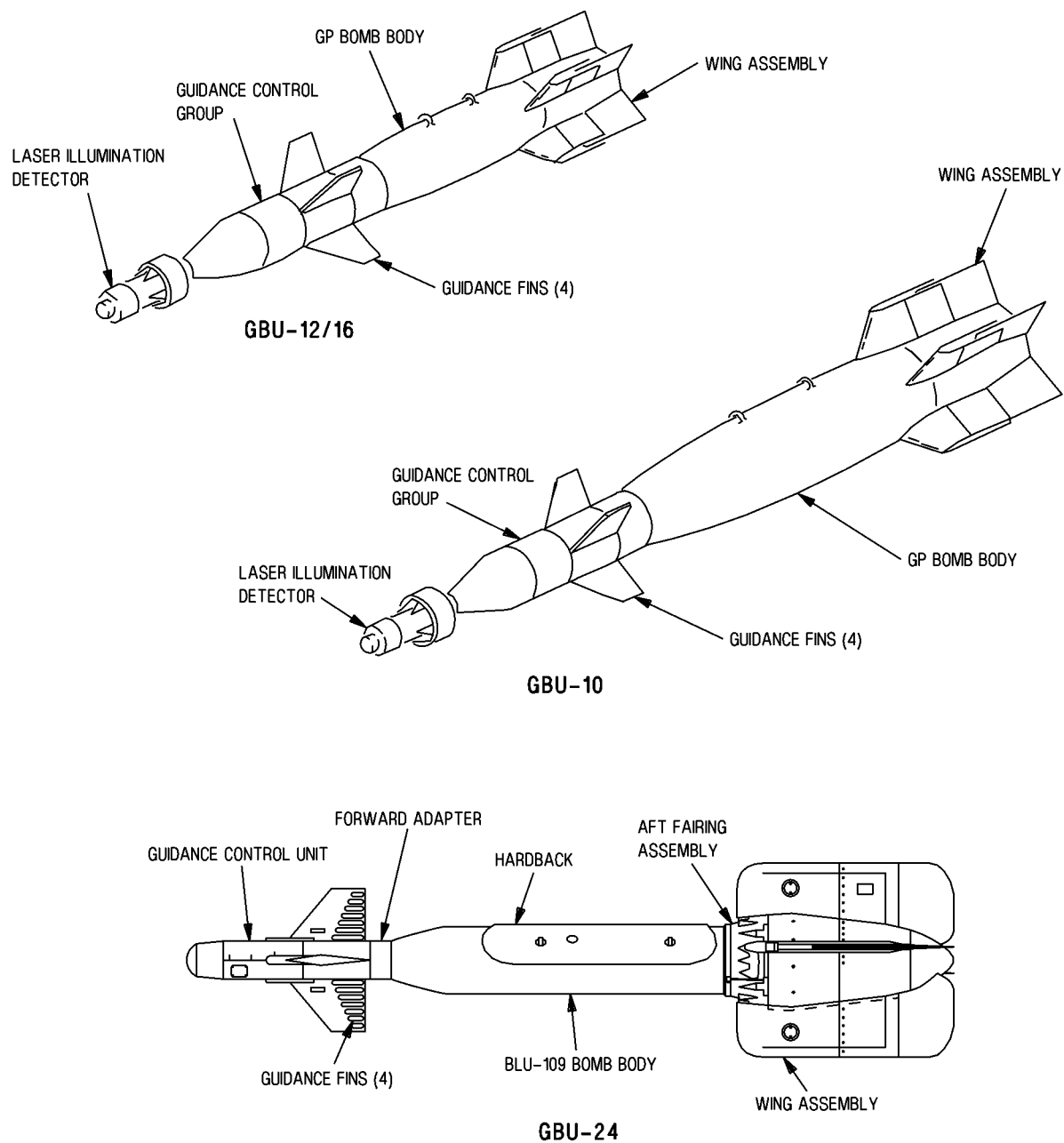
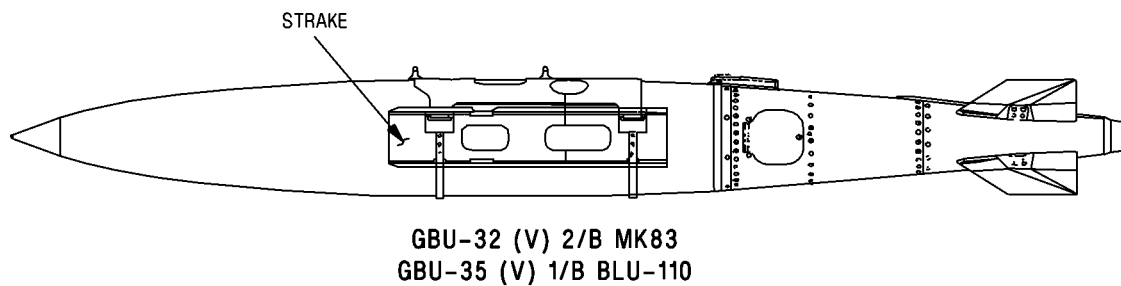
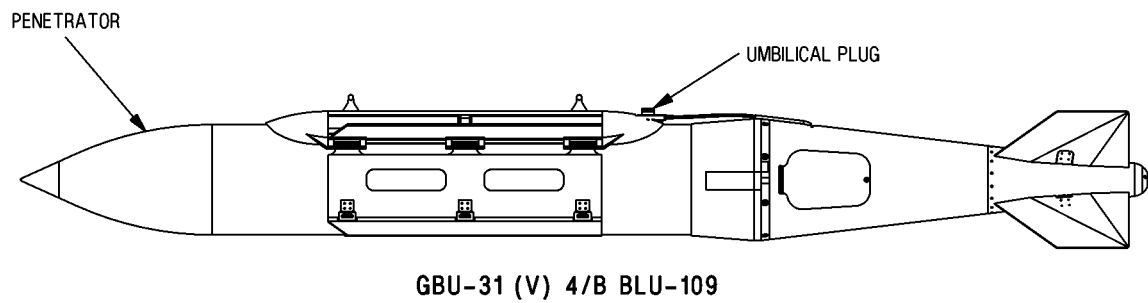
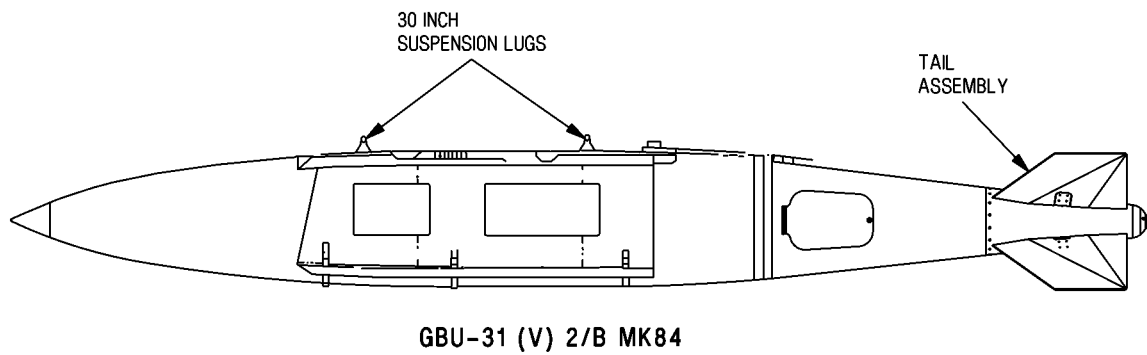


Figure 2-30. Guided Bomb Unit (GBU)

Physical Characteristics:	GBU-31(V) 2/B	GBU-31(V) 4/B	GBU-32(V) 2/B	GBU-35(V) 1/B
Weight:	2,085	2,165.5	1,031	1,031
Dimensions				
Length:	152.72 in.	148.60 in.	119.49 in.	119.49 in.
Suspension:	30 in.	30 in.	15 in.	15 in.



**Figure 2-31. Joint Direct Attack Munitions (JDAM)**

**Description**

2-168. **PYROTECHNICS.** Pyrotechnics are items used for illumination and marking as signals for identification or emergency use and for rescue work.

2-169. **LUU-2/LUU-19 Series Aircraft Parachute Flare.** The LUU-2/LUU-19 series aircraft parachute flares (Figure 2-32) consist of four major assemblies: the timer-end-cap assembly, parachute suspension system, ignition system, and case assembly with illumination candles. The timer-end-cap has a phosphorescent decal with calibrated markings from 250 to 11,000 feet-of-fall and a SAFE position. A white plastic timer knob is used to set the desired drop. The LUU-19 is an IR variant of the LUU-2 and provides covert illumination of the battlespace while using night vision goggles.

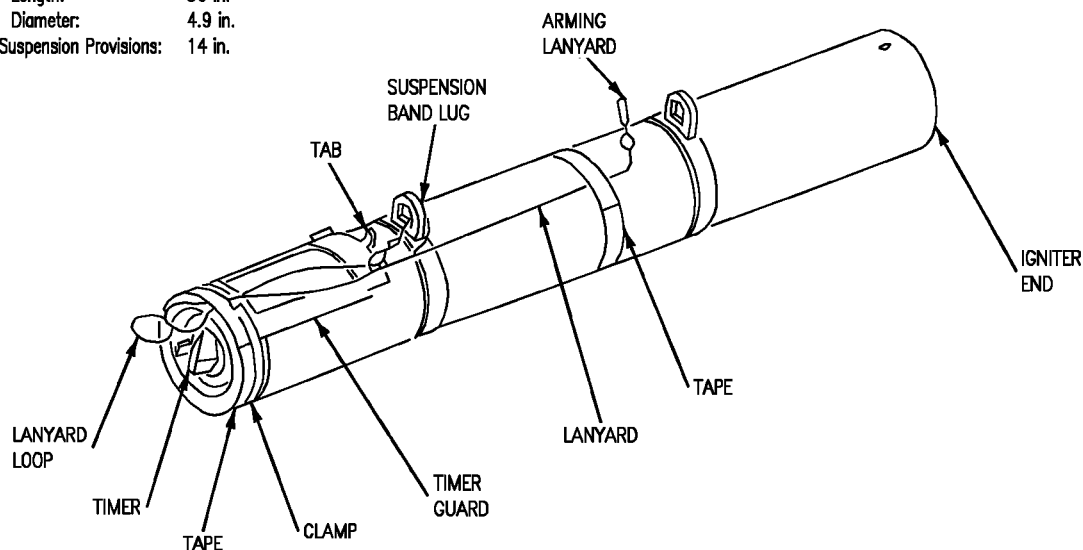
2-170. **Decoy Flare and Chaff Package.** Decoy flare and chaff package (Figure 2-33) is used to jam enemy detection equipment and to present false targets for missiles.

2-171. **Generic Expendable Decoy RT-1489/ALE (GEN-X).** The GEN-X (Figure 2-34) is a small one shot expendable terminal Radio Frequency (RF) threat countermeasure which receives an RF signal from a recognized threat and then transmits RF power to counter airborne and land-based semi-active radar guided missiles.

2-172. **Mk 58 Mods 0/1 Marine Location Marker.** The Mk 58 Mod 0/1 (Figure 2-35) uses a salt-water ignition system and produces yellow flame and white smoke for a minimum of 40 minutes and a maximum of 60 minutes. The outer case of the marker is stenciled to show the manufacturer's name, date of manufacture, Mark and Mod designation, and points where suspension bands are to be attached. A twist key for removing the marker tear strip is soldered to the bottom of the case. The marker is made ready by using the key to remove the tear strip, thereby exposing a ring for attaching a lanyard. After release, the lanyard peels back a tape strip

**PHYSICAL CHARACTERISTICS:**

Weight:	30 lb.
Dimensions:	
Length:	36 in.
Diameter:	4.9 in.
Suspension Provisions:	14 in.



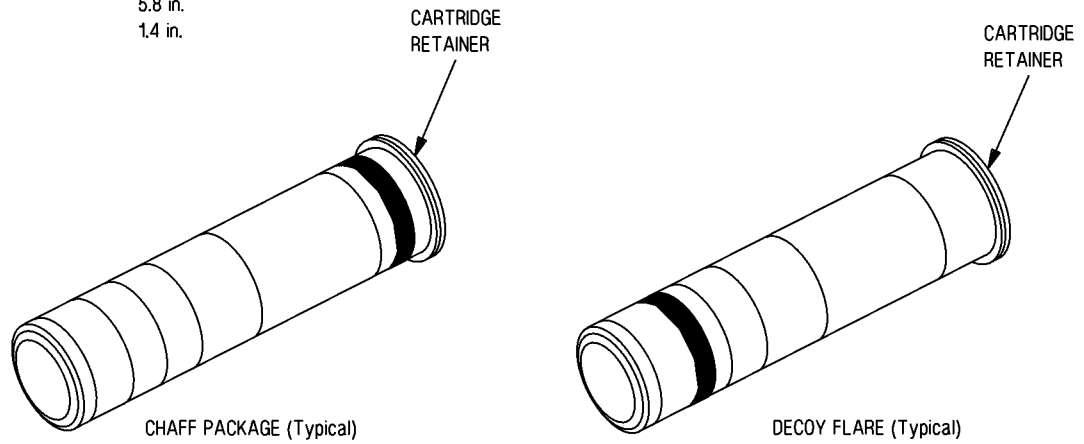
**Figure 2-32. LUU-2/LUU-19 Series Aircraft Parachute Flare**



**PHYSICAL CHARACTERISTICS:**

Dimensions:

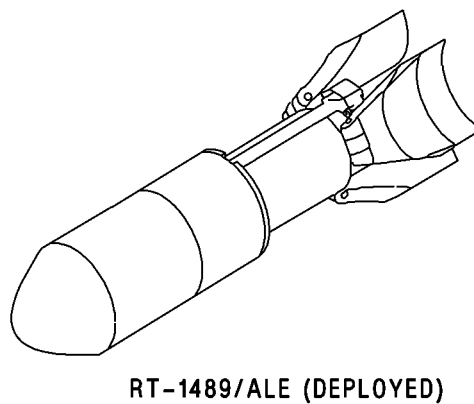
Length: 5.8 in.  
 Diameter: 1.4 in.



**Figure 2-33. Chaff and Decoy Flare (Typical)**

**PHYSICAL CHARACTERISTICS:**

Weight: 1.1 lb.  
 Dimensions:  
 Length: 5.8 in.  
 Diameter: 1.4 in.



**Figure 2-34. Generic Expendable Decoy (GEN-X) RT-1489/ALE**

## Description

## PHYSICAL CHARACTERISTICS:

Weight:	12.8 lb.
Dimensions:	
Length:	21.5 in.
Diameter:	4.9 in.
Suspension Provisions:	Bands (BASB)

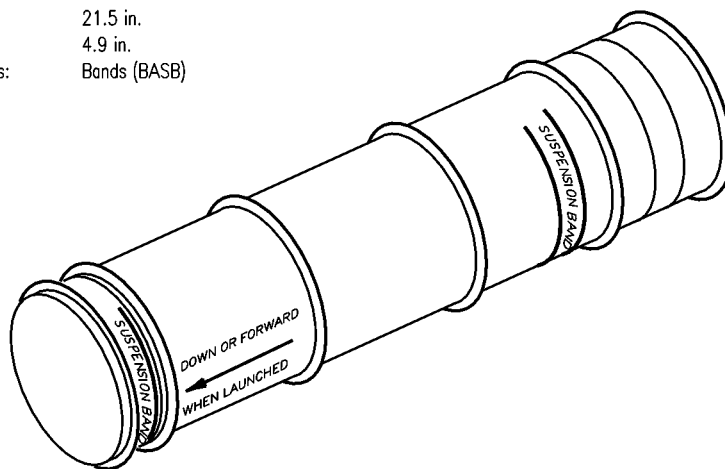


Figure 2-35. Mk 58 Mods 0/1 Marine Location Marker

that covers the water entry port for the marker ignition system. Saltwater enters the marker and acts as an electrolyte by activating a battery that generates an electric current.

2-173. **DISPENSERS.** Dispensers are containers used to carry and release a variety of stores. The dispensers can be installed internally in the aircraft, or they can be aerodynamically shaped and carried externally on the aircraft external racks.

2-174. **AN/ALE-29A Decoy Dispenser Magazine.** The decoy dispenser magazine (Figure 2-36) is a plastic block containing 30 tubes for 30 individual decoy rounds. Each decoy round is ejected by gas pressure generated by an electrically initiated impulse cartridge. The impulse cartridges are held in place by plastic sleeves. Two retractable carrying handles are installed in the top of the dispenser magazine. The loaded dispenser magazine is supported by these handles for loading purposes. A chaff sleeve extractor is provided with the dispenser magazine for use in unloading. The dispensers are used in the AN/ALE-39 countermeasures system.

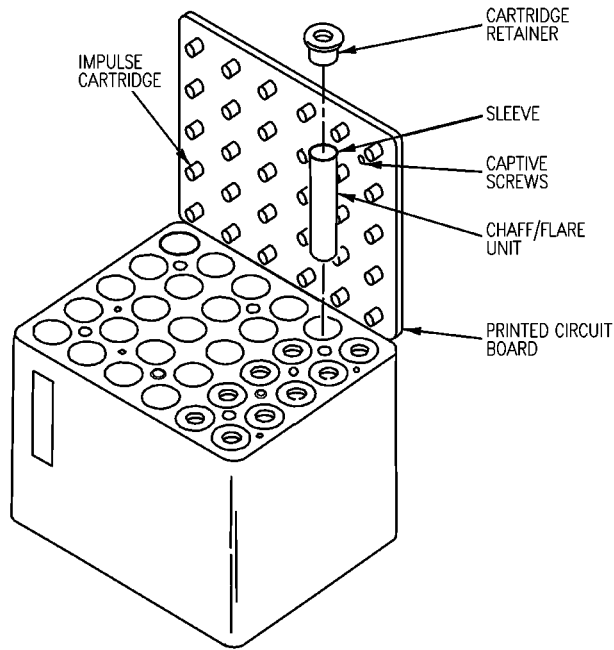
2-175. **AN/ALE-47 Countermeasures Decoy Dispenser Magazine.** The decoy dispenser magazine (Figure 2-37) is an aluminum block containing 30 tubes for 30 individual decoy rounds. Each decoy round is ejected by gas pressure generated by an electrically initiated impulse cartridge. The impulse cartridges are held in place by plastic sleeves. Two retractable carrying handles are installed in the top of the dispenser magazine. The loaded dispenser magazine is supported by these handles for loading purposes.

2-176. **PRACTICE BOMBS.** Practice bombs are training devices used to simulate the performance characteristics of live weapons.

2-177. **Mk 76 Practice Bomb.** The Mk 76 practice bomb (Figure 2-38) is a teardrop-shaped bomb that has a cast metal body and is centrally bored. The fin assembly consists of four fin blades attached to the bomb's inner cylinder. The inner cylinder extends to the forward end of the bomb. A firing pin assembly and signal (spotting

**PHYSICAL CHARACTERISTICS:**

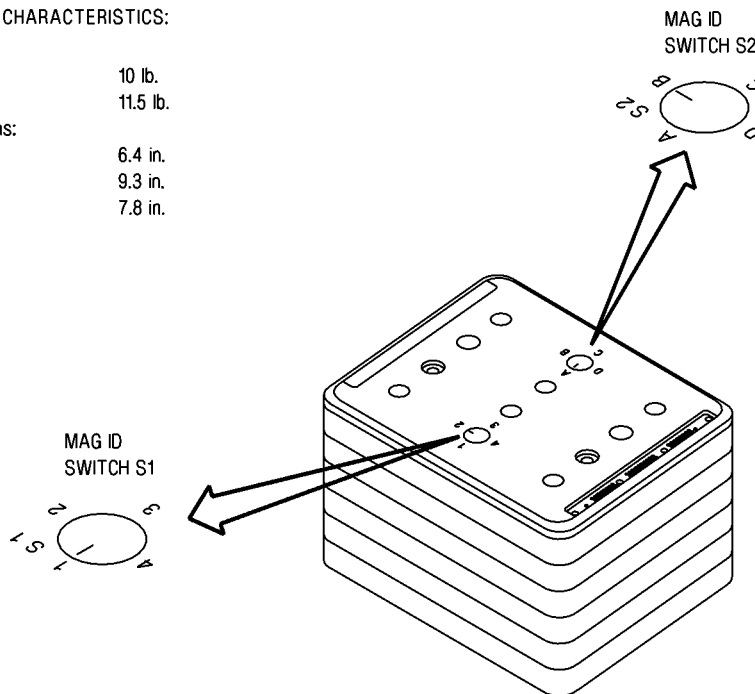
Weight:  
 Empty: 10 lb.  
 Loaded: 11.5 lb.  
 Length: 9.3 in.  
 Width: 7.8 in.  
 Suspension Provisions: MX-7829/ALE  
 29A HOUSING



**Figure 2-36. AN/ALE-29A Decoy Dispenser Magazine**

**PHYSICAL CHARACTERISTICS:**

Weight:  
 Empty: 10 lb.  
 Loaded: 11.5 lb.  
 Dimensions:  
 Length: 6.4 in.  
 Width: 9.3 in.  
 Height: 7.8 in.

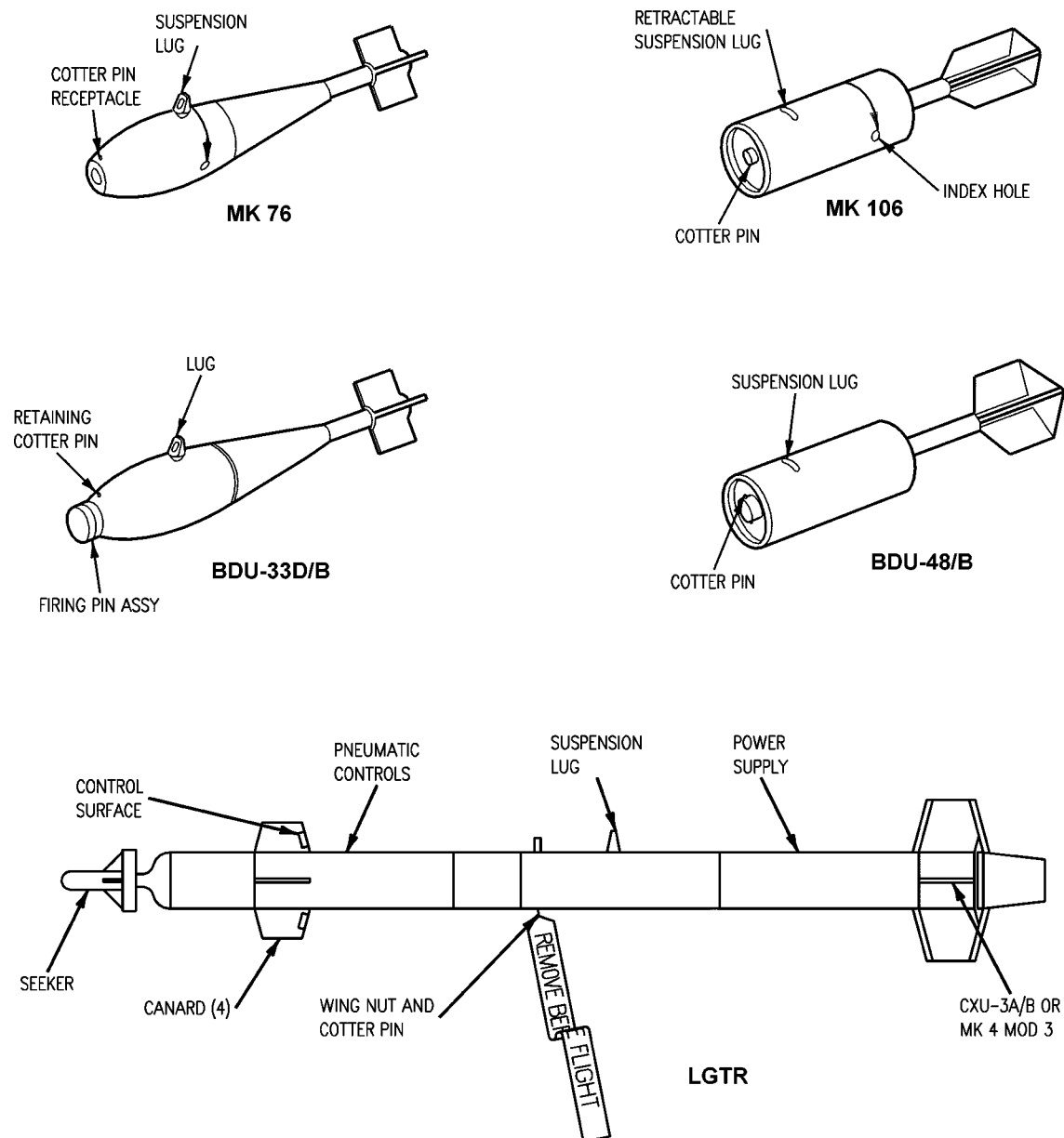


**Figure 2-37. AN/ALE-47 Countermeasures Dispenser Magazine**

# A1-F18AE-LWS-000 Description

## PHYSICAL CHARACTERISTICS:

	MK 76	MK 106 Mod 5	BDU-33D/B	LGTR	BDU-48/B
Weight:	24.5 lb.	5.13 lb.	25 lb.	89 lb.	10 lb.
Dimensions:					
Length:	24.7 in.	21.12 in.	23 in.	75 in.	21 in.
Diameter:	4 in.	3.8 in.	4 in.	4 in.	4 in.
Suspension Provisions:	Single lug	Single lug	Single lug	Single lug	Single lug



**Figure 2-38. Practice Bombs/LGTR**

charge) are retained in the forward end of the bomb inner cylinder with a cotter pin. A single lug is threaded into the bomb body for suspension.

**2-178. Mk 106 Practice Bomb.** The Mk 106 practice bomb (Figure 2-38) has a cylinder-shaped body. The box-type fin assembly consists of four fin blades attached to the bomb inner cylinder. The inner cylinder extends through the nose of the bomb. A firing pin assembly and signal (spotting charge) must be installed in the forward end of the bomb inner cylinder. The suspension lug is integral to the bomb body and can be raised or positioned flush with the bomb body surface. The Mk 106 Mod 5 PB is a high drag practice bomb. It is geometrically identical to the Mk 106 Mod 4 PB, with the exception that the retractable suspension lug is 0.3 inches longer and the tail boom has been extended 2.62 inches.

**2-179. BDU-33D/B Practice Bomb.** The BDU- 33D/B practice bomb (Figure 2-38) has a teardrop shaped cast metal body that is centrally bored. The tail tube fits into the end of the bore. The conical afterbody covers the tail tube and is crimped to the body. The fin assembly is welded to the tail tube. The bomb is designed for impact firing. The firing pin assembly consists of a firing pin, a collar, and a safety block. The firing pin and collar are held in the proper relationship to each other by a shear pin. The safety block, held on the firing pin head by a safety (cotter) pin, prevents the firing pin from moving aft and firing the signal (spotting charge) during ground handling operations. The firing pin assembly is retained in the bomb nose by a retaining cotter pin through the bomb body and the hole in the assembly. The hole diameter in the assembly is larger than the cotter pin diameter to allow the aft movement of the firing pin. When the safety block is removed, the collar of the assembly will rest against the rim of the signal (spotting charge) but the firing pin will be held away from the signal (spotting charge) primer by the shear pin. Upon impact, the shear pin holding the firing pin and collar is sheared which allows the firing pin to move aft and fire the signal (spotting charge).

**2-180. BDU-48/B Practice Bomb.** The BDU-48/B practice bomb (Figure 2-38) is designed to simulate high drag configured Mk 80 series GP bombs. It is similar in appearance and construction to the Mk 106 Mod 5 practice bomb. Its additional weight provides for a more stable release, better trajectory, and improved impact pattern on target. It is comprised of a bomb body assembly with a bore tube for installation of a signal (spotting charge), a firing pin, and a spring loaded retractable suspension lug. Impact initiates a signal (spotting charge) that expels smoke/flame from the bore tube for impact marking.

**2-181. Laser Guided Training Round (LGTR).** The LGTR (Figure 2-38) is designed to detect laser illuminated targets and provide realistic laser guided bomb (LGB) tactical training. The training round consists of a guidance and control section, pneumatic controls for moveable control surfaces, power supply, and a standard practice bomb signal marker. Guidance and control requires that one of four prebriefed laser codes must be selected prior to upload. During store release, the ejector rod provides a 340 pound force to separate the LGTR from the MER ejector unit. The fully extended ejector rod also initiates battery power and the squib releasing stored compressed gas to the pneumatic control actuator. A wing nut and cotter pin is used to safe the ejector rod prior to loading. Once initiated, the system cannot be reset. The signal marker (spotting charge) is impact initiated and does not require safety/cotter pins.

**2-182. FORWARD FIRING WEAPONS.** Forward firing weapons are those weapons propelled in a forward direction. Missiles, rockets, and guns are categorized as forward firing weapons.

**2-183. Missiles.** Missiles are self-propelled weapons that contain a guidance and control unit.

**2-184. AIM-7 Series (Sparrow) Guided Missile.** The AIM-7 series missile (Figure 2-39) is a supersonic, radar guided air-to-air weapon. The missile is designed to be pylon or ejection launched from the aircraft. Semi-active CW homing radar and hydraulically operated control surfaces direct and stabilize the missile on course.

## Description

## PHYSICAL CHARACTERISTICS:

	AIM-7F	AIM-7M
Weight:	510.0 lb.	510.0 lb.
Dimensions:		
Length:	145.2 in.	144.0 in.
Diameter:	8.0 in.	8.0 in.
Wing Span:	40.0 in.	40.0 in.
Tail Span:	31.0 in.	31.6 in.
Suspension Provisions:	LAU-116/LAU-115	

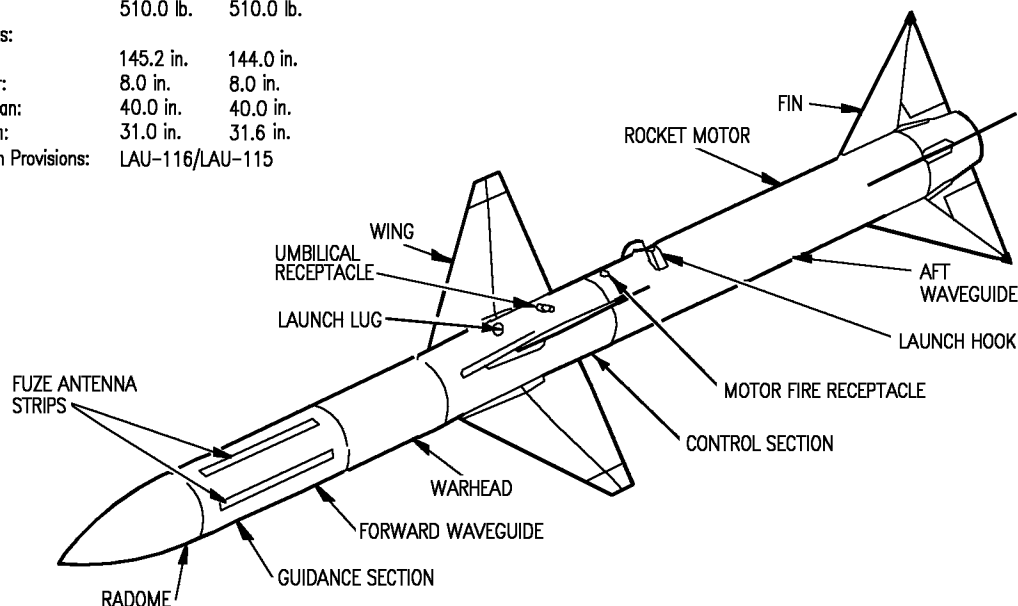


Figure 2-39. AIM-7 Series (Sparrow) Guided Missile

2-185. **AIM-9L/M (Sidewinder) Guided Missile.** The AIM-9L/M guided missile (Figure 2-40) is a supersonic, air-to-air weapon, with a passive infrared target detection, proportional-navigation guidance, and torque-balance control system. Aerodynamic lift and stability are provided by four wings. Rollers on each wing reduce roll rate and provide pitch and yaw damping. Missile maneuvering is accomplished with four forward mounted fins.

2-186. **AIM-9X (Sidewinder) Guided Missile.** The AIM-9X guided missile (Figure 2-41) is a supersonic air-to-air weapon that incorporates an IR imaging sensor, target detector (TD), warhead, propulsion/steering section (PSS), a high performance jet vane control actuation system, and the addition of forward wings to improve maneuverability. A cryoengine is incorporated in the missile to eliminate the need for internal/external cryo gas bottles.

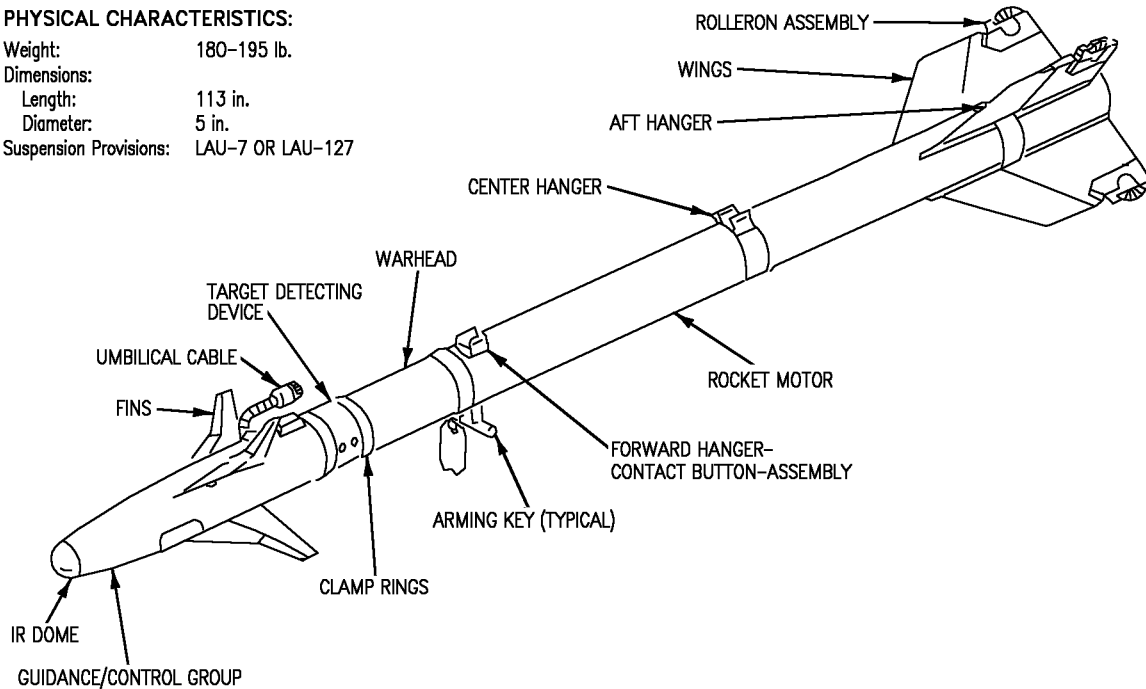
2-187. **AIM-120 (AMRAAM) Guided Missile.** The AIM-120 guided missile (Figure 2-42) is a supersonic air-to-air weapon with active radar target detection and on-board inertial navigation guidance. These missiles are designed to be pylon or ejection launched from the aircraft. In-flight missile stabilization and navigational corrections are accomplished with wing and fin control surfaces.

2-188. **AGM-65 (Maverick) Series Missile.** The AGM-65 missile (Figure 2-43) is a guided rocket propelled air-to-ground missile for use against field fortifications, surface-to-air missile sites, and armored vehicles. The forward section of the missile consists of a hermetically sealed guidance unit and a main section.

2-189. **AGM-84D/E (Harpoon/SLAM) Missile.** The AGM-84D/E missile (Figure 2-44) consists of the guidance section, warhead section (or exercise section), sustainer section, control section, wings, and control fins. The missile is an all weather air-to-surface attack weapon. It incorporates low-level cruise trajectory over the horizon.

**PHYSICAL CHARACTERISTICS:**

Weight: 180-195 lb.  
Dimensions:  
Length: 113 in.  
Diameter: 5 in.  
Suspension Provisions: LAU-7 OR LAU-127



**Figure 2-40. AIM-9L/M (Sidewinder) Guided Missile**

2-190. **AGM-84H (SLAM ER) Missile.** The AGM- 84H (SLAM ER) missile (Figure 2-44) is an improved version of the SLAM with performance enhancements designed to address greater target coverage, destruction, and penetration; improved weapon system survivability; and improved user friendliness.

2-191. **AGM-88 (HARM) Missile.** The AGM-88 missile (Figure 2-45) is a passive supersonic air-to-ground missile. The missile body consists of the guidance section, the control section, the warhead section, and rocket motor.

2-192. **AGM-154 (JSOW) Missile.** The AGM-154 missile (Figure 2-46) is an air-to-ground glide weapon that can be employed against a variety of land and sea targets. The missile can incorporate a 500 pound warhead or cluster munition. The missile uses a Global Positioning System (GPS) aided ring-laser Inertial Navigation System (INS) for navigation.

2-193. **Rocket Launchers.** Rocket launchers are devices used to carry or suspend self-propelled weapons. Most launchers serve to guide the self-propelled weapons on their first few inches of flight.

2-194. **LAU-10 Series Aircraft Rocket Launcher.** The LAU-10 series aircraft rocket launcher (Figure 2-47) is designed for reuse and consists of a center section and frangible fairings. The frangible fairings are used on each end of the launcher center section to reduce aerodynamic drag. The launcher center section contains the rocket tubes, rockets, and rocket ignition system. Forward and aft electrical receptacles are provided for connection to the aircraft rocket release system. The two receptacles are equipped with shorting devices that ground the launcher rocket circuitry and prevent inadvertent rocket firing. A mode selector switch on the center section aft bulkhead provides RIPPLE or SINGLE rocket firing section.

Description

**PHYSICAL CHARACTERISTICS:**

Weight: 189 lb.  
 Dimensions:  
 Length: 119 in.  
 Diameter: 5 in.  
 Suspension Provisions: LAU-7D/A OR LAU-127A/A

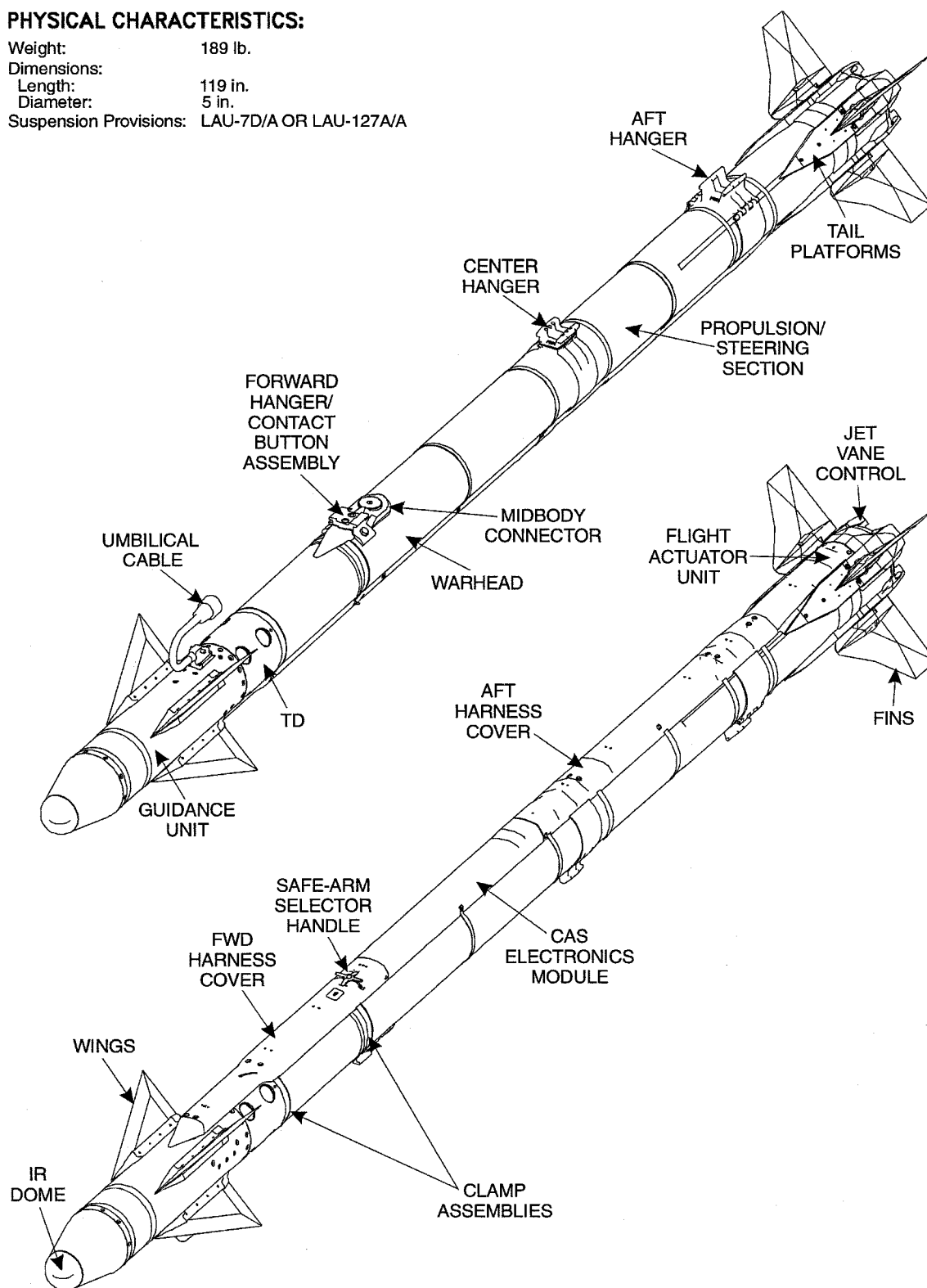
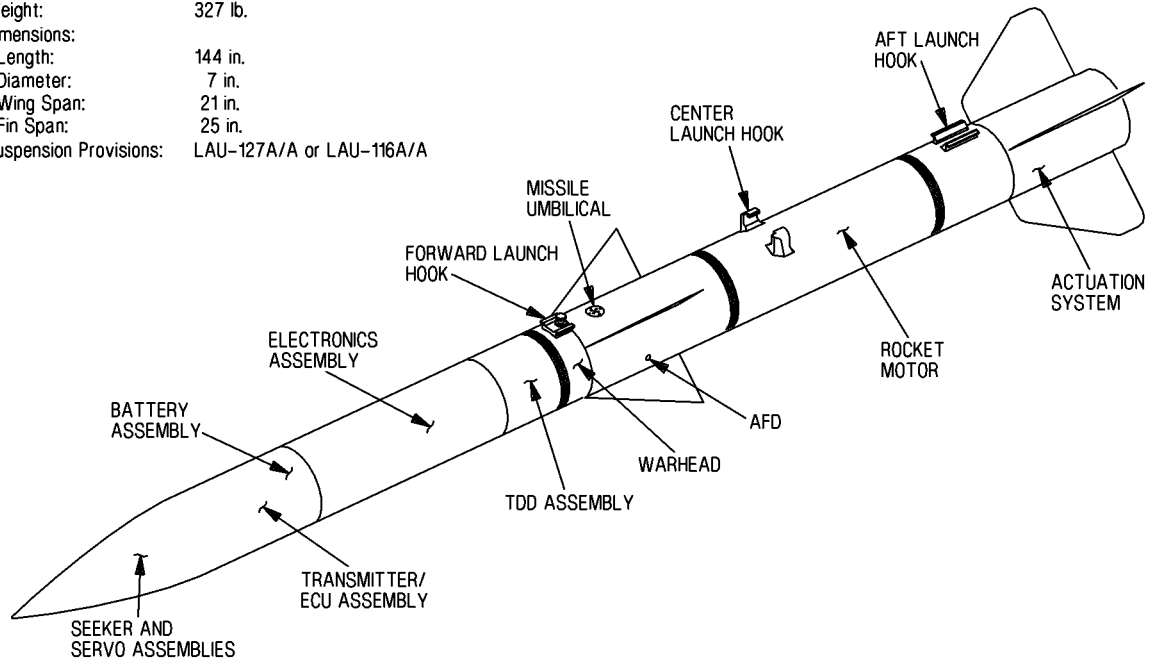


Figure 2-41. AIM-9X (Sidewinder) Guided Missile



**PHYSICAL CHARACTERISTICS:**

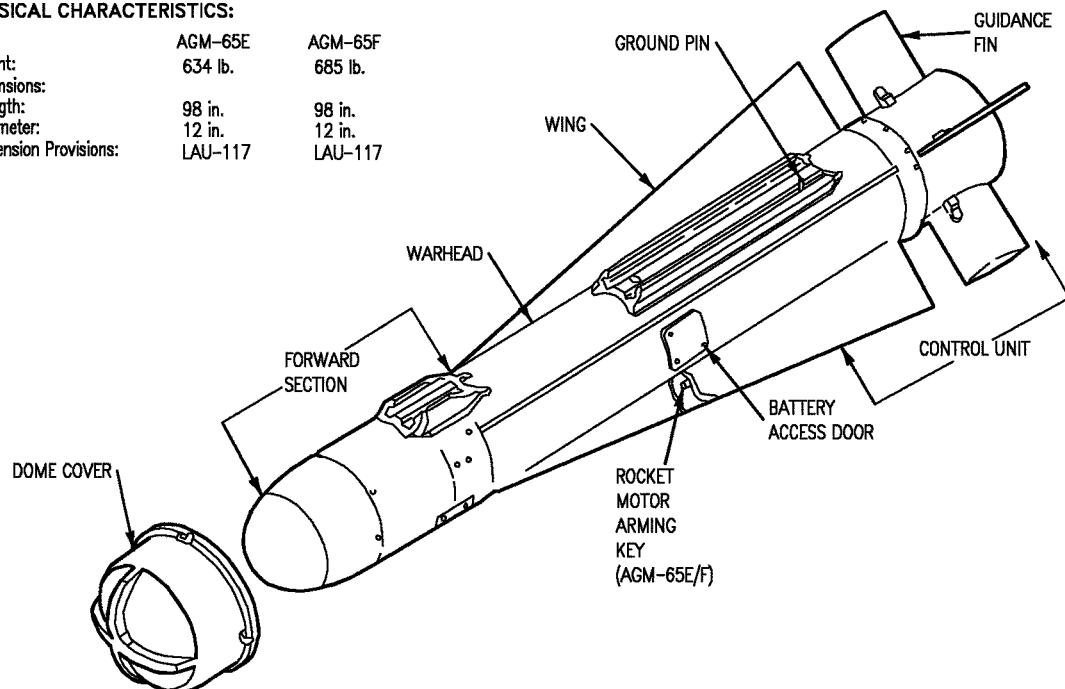
Weight: 327 lb.  
 Dimensions:  
 Length: 144 in.  
 Diameter: 7 in.  
 Wing Span: 21 in.  
 Fin Span: 25 in.  
 Suspension Provisions: LAU-127A/A or LAU-116A/A



**Figure 2-42. AIM-120 (AMRAAM) Guided Missile**

**PHYSICAL CHARACTERISTICS:**

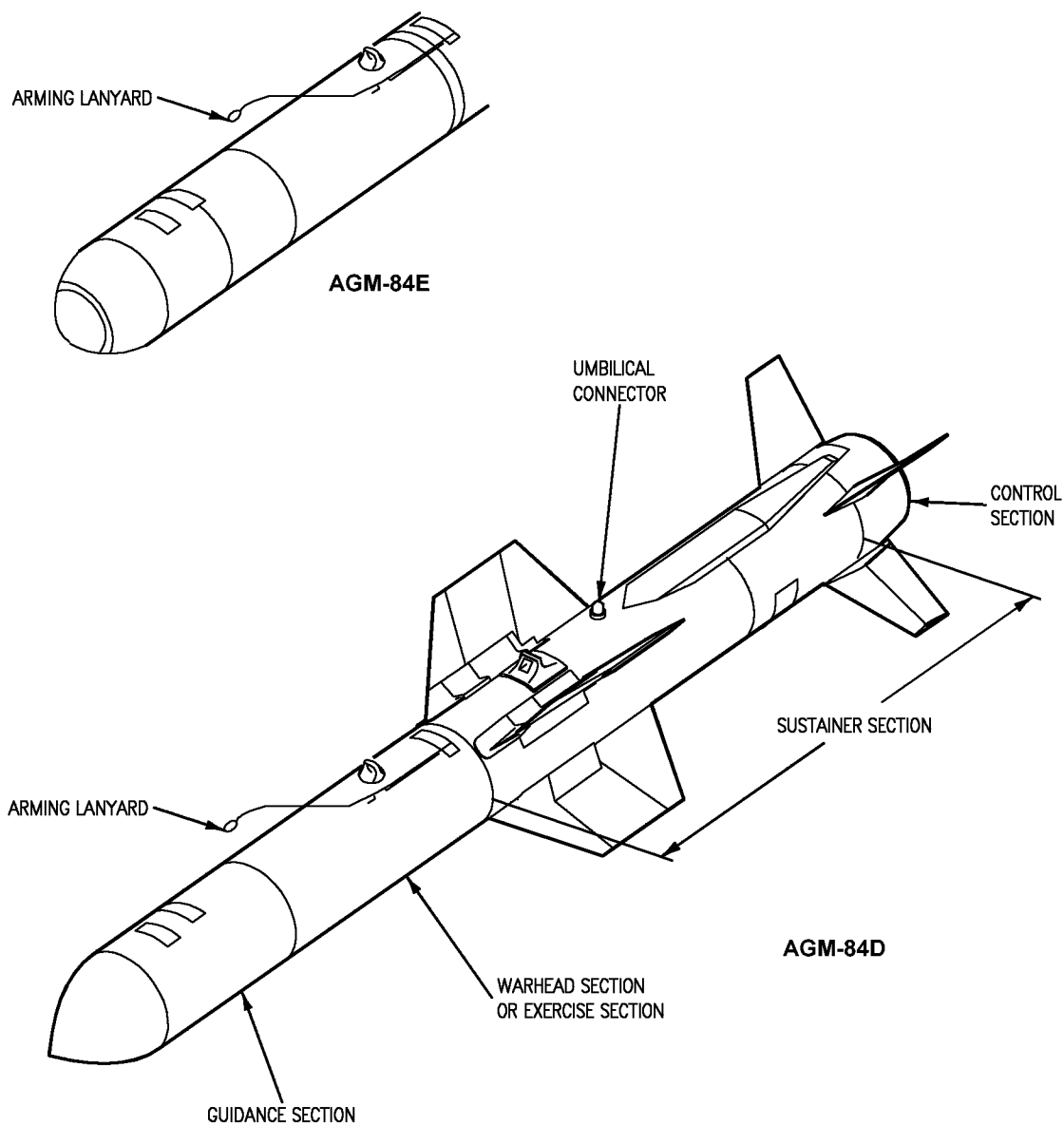
	<b>AGM-65E</b>	<b>AGM-65F</b>
Weight:	634 lb.	685 lb.
Dimensions:		
Length:	98 in.	98 in.
Diameter:	12 in.	12 in.
Suspension Provisions:	LAU-117	LAU-117



**Figure 2-43. AGM-65 (Maverick) Missile**

**A1-F18AE-LWS-000**  
**Description**

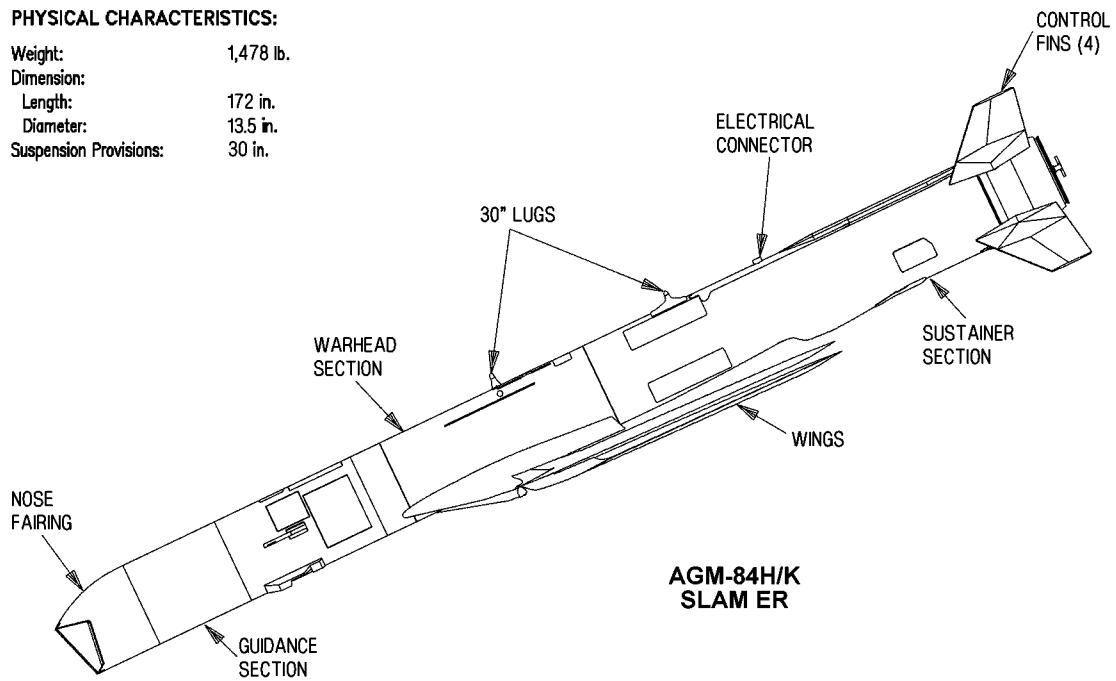
<b>PHYSICAL CHARACTERISTICS:</b>	<b>AGM-84D</b>	<b>AGM-84E</b>
Weight:	1160 lb.	1366 lb.
Dimension:		
Length:	151 in.	175 in.
Diameter:	13.5 in.	13.5 in.
Suspension Provisions:	30 in.	30 in.



**Figure 2-44. AGM-84 (Series) Missile (Sheet 1 of 2)**

**PHYSICAL CHARACTERISTICS:**

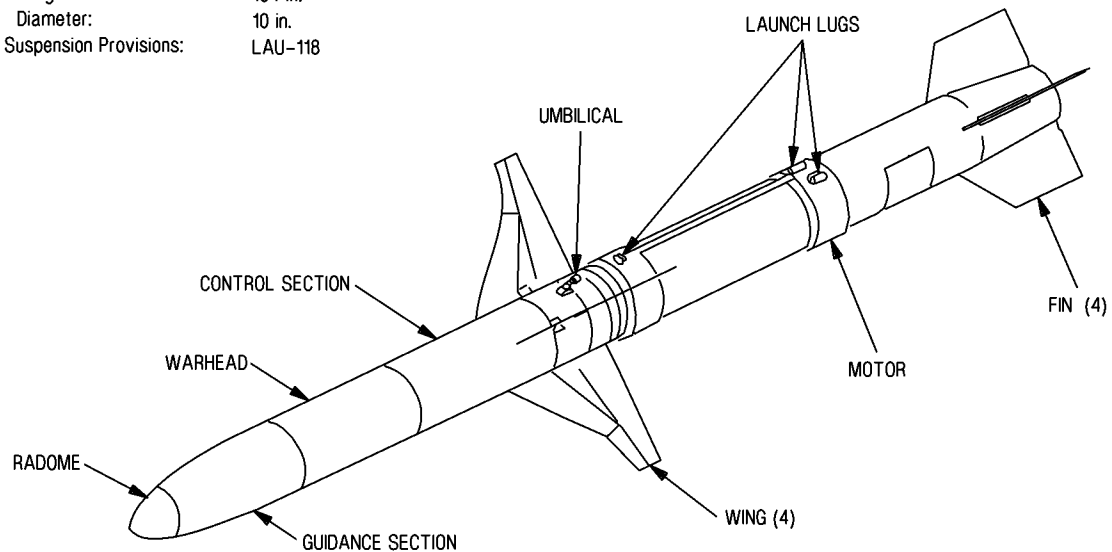
Weight: 1,478 lb.  
 Dimension:  
 Length: 172 in.  
 Diameter: 13.5 in.  
 Suspension Provisions: 30 in.



**Figure 2-44. AGM-84 (Series) Missile (Sheet 2)**

**PHYSICAL CHARACTERISTICS:**

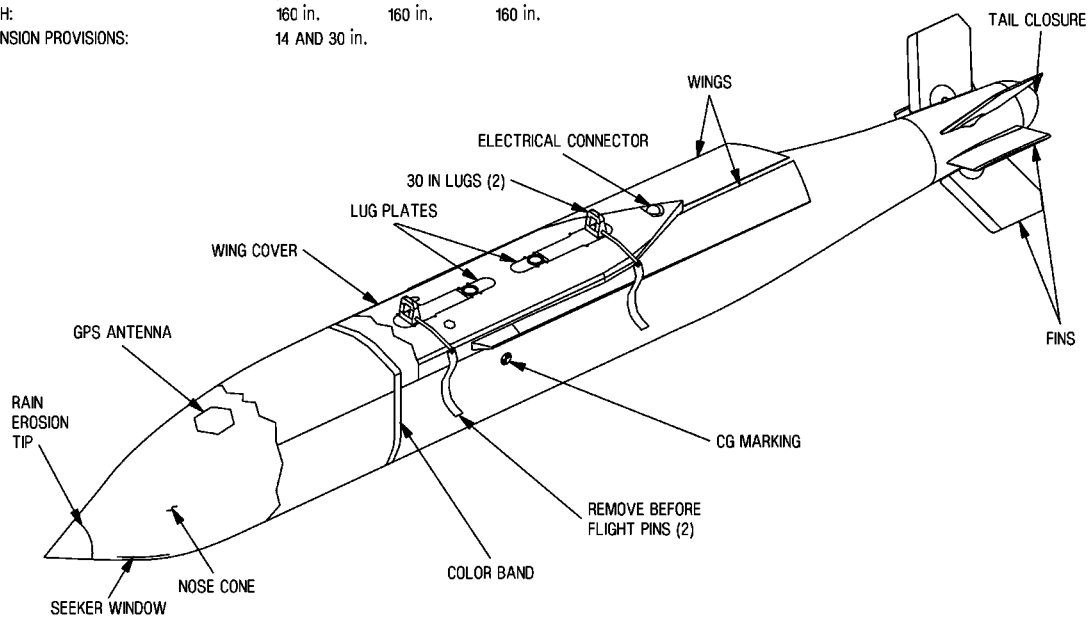
Weight 780 lb.  
 Dimensions:  
 Length: 164 in.  
 Diameter: 10 in.  
 Suspension Provisions: LAU-118



**Figure 2-45. AGM-88 (HARM) Missile**

## Description

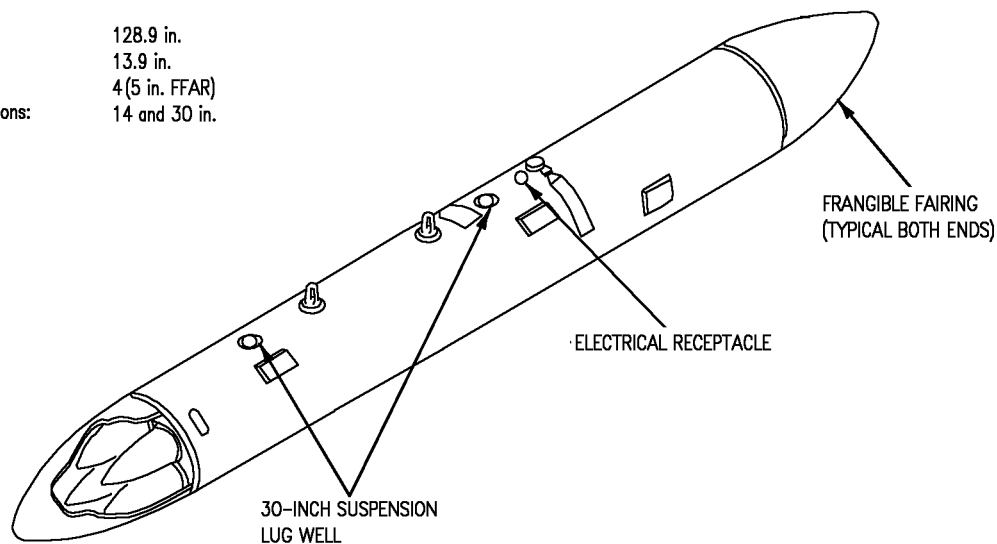
<b>PHYSICAL CHARACTERISTICS:</b>	AGM-154A	AGM-154B	AGM-154C
WEIGHT:	1065 lb.	1065 lb.	1965 lb.
MUNITIONS:	(145)BLU-97	(6)BLU-108	(1)500 lb. WARHEAD
LENGTH:	160 in.	160 in.	160 in.
SUSPENSION PROVISIONS:	14 AND 30 in.		



**Figure 2-46. AGM-154 (JSOW) Missile**

### PHYSICAL CHARACTERISTICS:

Weight:	
Empty:	105-136 lbs.
Loaded:	533-686 lbs.
Dimensions:	
Length:	128.9 in.
Diameter:	13.9 in.
Capacity:	4 (5 in. FFAR)
Suspension Provisions:	14 and 30 in.



**Figure 2-47. LAU-10 Series Aircraft Rocket Launcher**

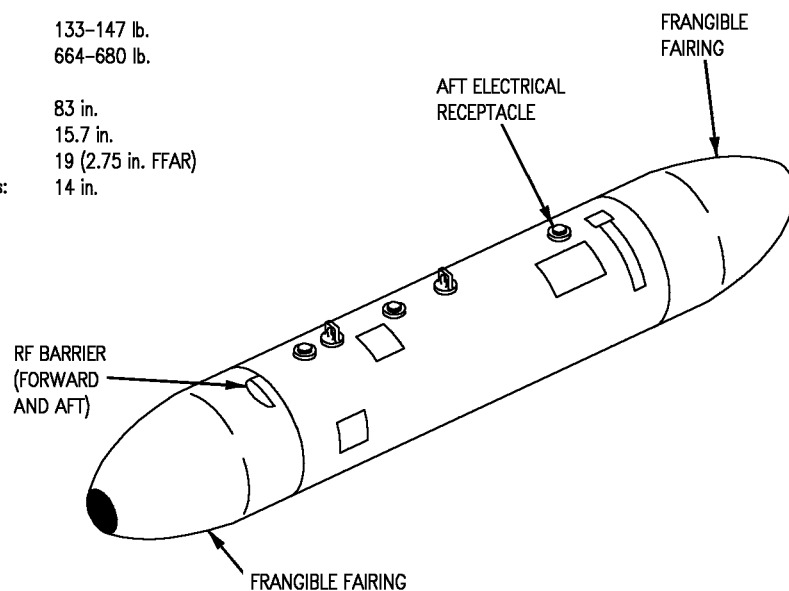
**2-195. LAU-61 Series Aircraft Rocket Launcher.** The LAU-61 series aircraft rocket launcher (Figure 2-48) is designed for reuse and consists of a center section, and forward and aft frangible fairings. The fairings are used to reduce aerodynamic drag and are not interchangeable. The rocket launcher center section contains the rockets, rocket tubes, and ignition system. Forward and aft electrical receptacles are provided for connection to the aircraft rocket release system. A safety pin is located on the side and near the rear of the launcher. When the safety pin is inserted, the launcher electrical system is grounded. A mode selector switch and intervalometer are located on the center section aft bulkhead. The mode selector switch has RIPPLE and SINGLE fire positions. The intervalometer has L (load), A (arm), and 1 through 10 numbered positions. The intervalometer must be set to the A position before the aft fairing is installed. The mode selector switch must also be set to the desired (RIPPLE or SINGLE) position before installing the aft fairing.

**2-196. LAU-68 Series Aircraft Rocket Launcher.** The LAU-68 series aircraft rocket launcher (Figure 2-49) is designed for reuse and consists of a center section, a frangible nose fairing, and a tail fairing. The nose fairing is used to reduce aerodynamic drag, and the tail fairing is designed to remain intact and direct debris away from the aircraft. The launcher center section contains the rockets, rocket tubes, and ignition system. Forward and aft electrical receptacles are provided for connection to the aircraft rocket release system. A safety pin is located on the side and near the rear of the launcher. When the safety pin is inserted, the launcher electrical system is grounded. A mode selector switch and intervalometer are located on the center section aft bulkhead. The mode selector switch has RIPPLE and SINGLE fire positions. The intervalometer control has L (load), A (arm), and 1 through 7 numbered positions. The intervalometer must be set to the A position before the tail fairing is installed. The mode selector switch must also be set to the desired (RIPPLE or SINGLE) position before installing the tail fairing.

**2-197. Guns.** Guns are aircraft weapons for air-to-ground and air-to-air combat.

#### PHYSICAL CHARACTERISTICS

<b>Weight:</b>	
Empty:	133–147 lb.
Loaded:	664–680 lb.
<b>Dimensions:</b>	
Length:	83 in.
Diameter:	15.7 in.
Capacity:	19 (2.75 in. FFAR)
Suspension Provisions:	14 in.

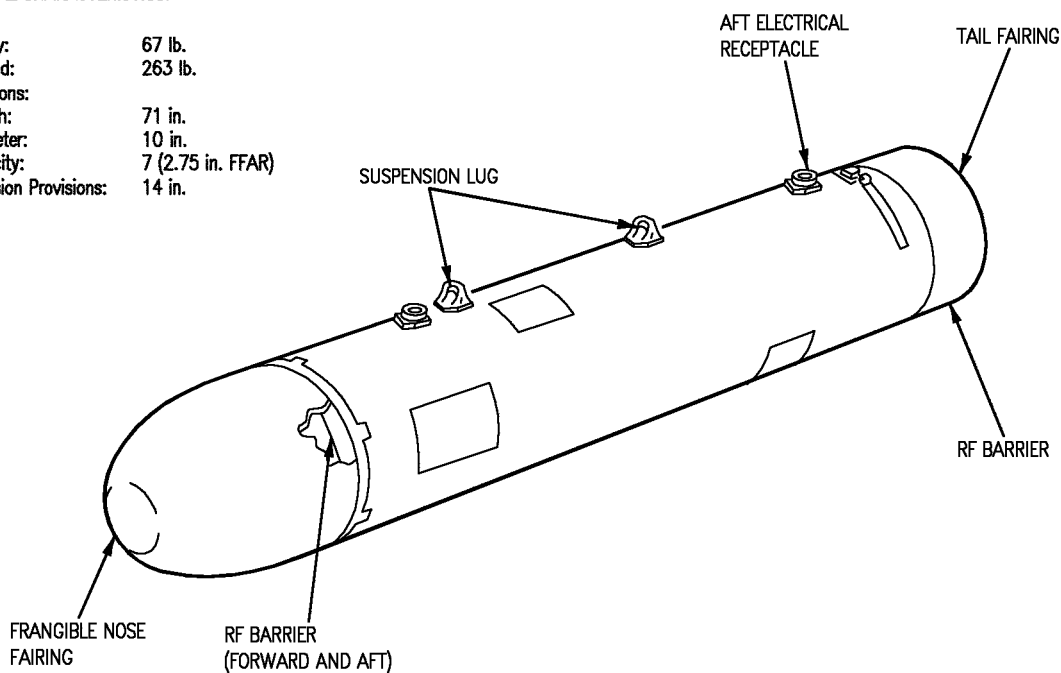


**Figure 2-48. LAU-61 Series Aircraft Rocket Launcher**

## Description

### PHYSICAL CHARACTERISTICS:

Weight:	
Empty:	67 lb.
Loaded:	263 lb.
Dimensions:	
Length:	71 in.
Diameter:	10 in.
Capacity:	7 (2.75 in. FFAR)
Suspension Provisions:	14 in.



**Figure 2-49. LAU-68 Series Aircraft Rocket Launcher**

2-198. **M61 20mm Gun.** The M61 20mm gun (Figure 2-50) is a six-barrel rotary action mechanism operated by a hydraulic drive unit. The gun fires M50 or PGU series ammunition at selectable rates of 4000 (LOW) or 6000 (HIGH) rounds per minute. The primary parts of the gun are the barrels, housing assembly, and rotor assembly. The encoder-decoder directs electrical signals to the clearing solenoid assembly and a control valve for the hydraulic drive unit and provides firing voltages to the primers in the ammunition.

2-199. **SPECIALIZED STORES.** Specialized stores are stores of a special nature that are not classified as weapons. These stores include ECM pods, fuel tanks, cargo delivery pods, data pods, and search stores.

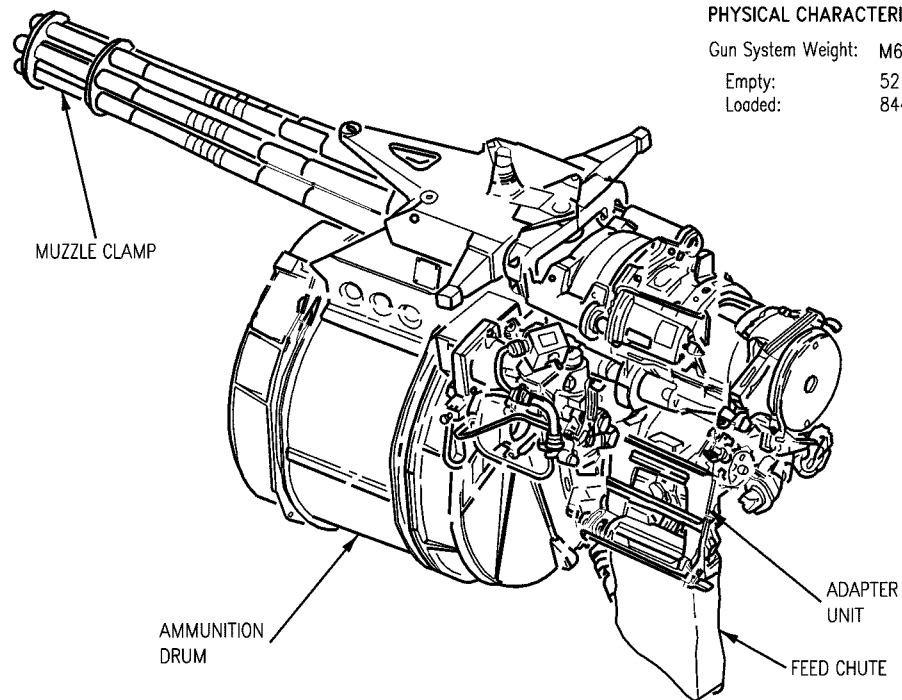
2-200. **Fuel Tanks.** Fuel tanks are designed to supplement the aircraft internal fuel supply.

2-201. **FPU-6/A 315 Gallon Fuel Tank.** FPU-6/A 315 gallon fuel tank (Figure 2-51) is an expendable fuel container used to supplement the aircraft internal fuel supply.

2-202. **FPU-8/A 330 Gallon Fuel Tank.** FPU-8/A 330 gallon fuel tank (Figure 2-52) is an expendable fuel container used to supplement the aircraft internal fuel supply.

2-203. **Cargo Delivery Pods.** Cargo delivery pods are streamlined containers used for the transport of supplies and baggage.

2-204. **CNU-188 External Baggage Container.** CNU-188 external baggage container (Figure 2-53) is a modified 300 gallon fuel tank with an approximate load weight of 345 pounds.



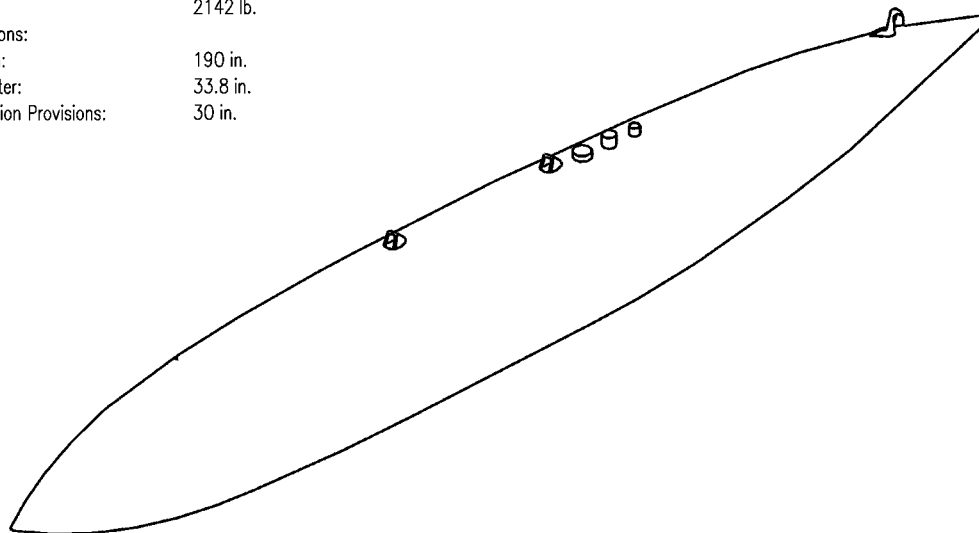
**PHYSICAL CHARACTERISTICS:**

Gun System Weight:	M61A1	M61A2
Empty:	521 lb.	469 lb.
Loaded:	844 lb.	792 lb.

**Figure 2-50. M61 20MM Gun**

**PHYSICAL CHARACTERISTICS:**

Weight:	
Empty:	324 lb.
Full:	2142 lb.
Dimensions:	
Length:	190 in.
Diameter:	33.8 in.
Suspension Provisions:	30 in.



**Figure 2-51. FPU-6/A Fuel Tank**

**Description**

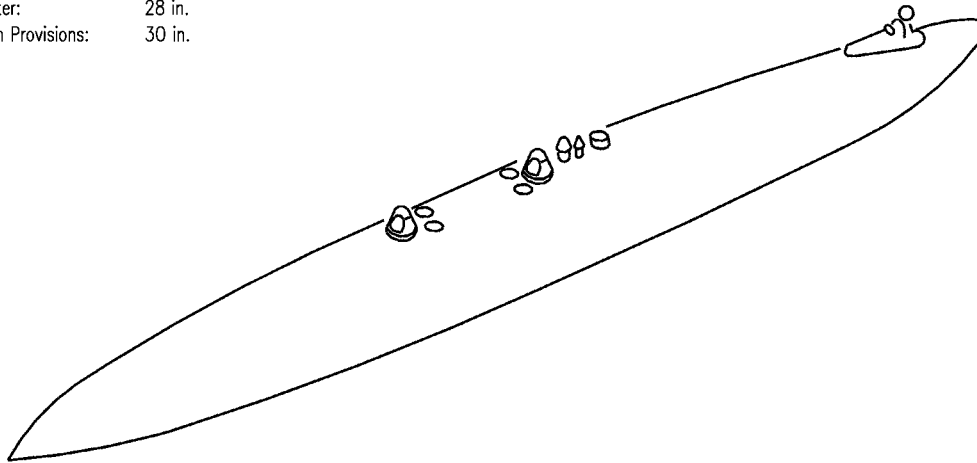
**PHYSICAL CHARACTERISTICS:**

**Weight:**

Empty:	324 lb.
Full:	2144 lb.

**Dimensions:**

Length:	188 in.
Diameter:	28 in.
Suspension Provisions:	30 in.



**Figure 2-52. FPU-8/A Fuel Tank**

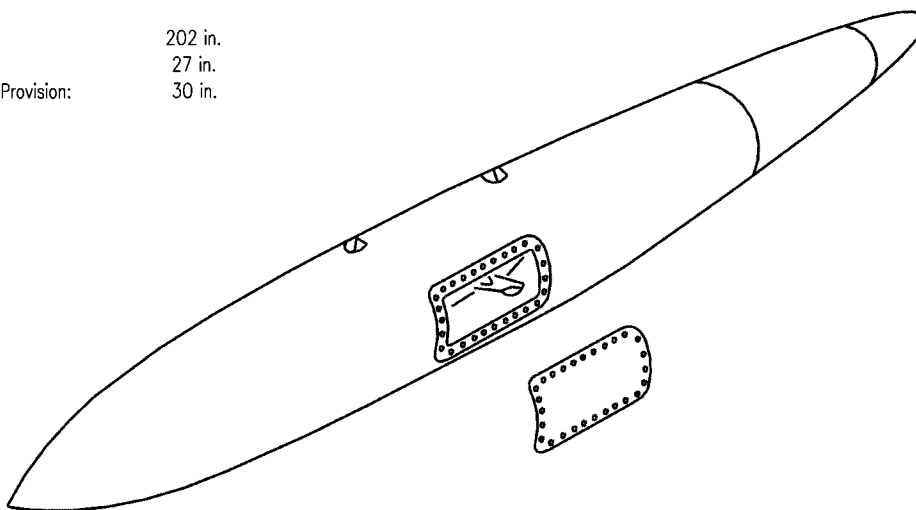
**PHYSICAL CHARACTERISTICS:**

**Weight:**

Empty:	218 lb.
Full:	564 lb.

**Dimensions:**

Length:	202 in.
Diameter:	27 in.
Suspension Provision:	30 in.



**Figure 2-53. CNU-188 External Baggage Container**



2-205. **Data Pods.** Data pods provide target and performance information.

2-206. **AN/AWW-13 Data Pod.** The data pod (Figure 2-54) is used with video guided weapons (SLAM/SLAM ER) that have data link capability. The data pod is used to supply target information to the guided weapons via RF transmissions. It can be used for single or dual aircraft delivery. The pod also has a video tape recorder to aid in mission debriefing.

2-207. **ATARS Data Link Mini Pod.** The ATARS Data Link Mini Pod (Figure 2-55) provides a supplementary data link function to the reconnaissance mission. It allows the transmission of near real time imagery to a ground station configured to the Common Imagery Ground/Surface System (CIG/SS) system. The pod provides overflight and limited stand-off capability and is jettisonable.

2-208. **Instrumentation Packages.** The Mobile Sea Range (MSR) Service Aircraft Instrumentation Package (SAIP)/Tactical Aircrew Combat Training System (TACTS) Pod (Figure 2-56) are self-contained airborne instrumentation systems. The pods use a Sidewinder shell to house an air data sensor, a weapons bus monitor, a transponder, and an inertial unit to simulate a missile firing and monitor actual aircraft flight performance. A two-way data link provides aircraft velocities, angular rates, and accelerations to a surface tracking instrumentation, control, and computation station. The pod uses existing aircraft weapon systems, requiring no special control system of its own.

2-209. **Tactical Air Launched Decoy (TALD).** The tactical air launched decoy (TALD) (Figure 2-57) is an expendable autopilot controlled, unpowered glide vehicle or a powered vehicle designed to confuse/degrade enemy radar. It produces false targets that simulate the radar cross section (RCS) of tactical aircraft.

2-210. **Improved Tactical Air Launched Decoy (ITALD).** The improved tactical air launched decoy (ITALD) (Figure 2-58) is an expendable, powered air launched, unmanned tactical flight vehicle that carries an RF payload of active and passive radar augmentation. The ITALD is designed to confuse/degrade enemy radar. It produces false targets that simulate the radar cross section of tactical aircraft.

2-211. **AN/ALQ-167(V) Countermeasures Set.** The AN/ALQ-167(V) countermeasures set (Figure 2-59) is an ECM system used for radar and missile system test and evaluation and personnel training. Noise and deception jamming is generated by the set to provide an ECM environment.

## **2-212. ARMAMENT WEAPONS SUPPORT EQUIPMENT (AWSE).**

2-213. Armament Weapons Support Equipment (AWSE) is defined as that category of support equipment required on the ground to make an aircraft, airborne weapon, prime weapon system, or end item of support equipment (support equipment for support equipment) operational in its intended environment. As with support equipment, AWSE is classified as either common or peculiar and may be avionic or nonavionic. AWSE is further divided into three subcategories: Weapons Support Equipment (WSE), Armament Support Equipment (ASE), and Logistics Support Equipment (LSE). For the purpose of this manual, only ASE and WSE will be covered.

2-214. **WEAPONS SUPPORT EQUIPMENT (WSE).** Weapons Support Equipment (WSE) includes all equipment whose primary function is support of the explosive ordnance component or weapon. WSE is used by organizational level, intermediate level, and depot level maintenance activities. WSE is subdivided into two categories: Weapons Handling Equipment (WHE) and Weapons Test Equipment (WTE). For the purpose of this manual, the WSE will not be broken down into its subcategories.

## Description

### PHYSICAL CHARACTERISTICS:

Weight: 595 lb. to 725 lb.  
 Dimensions:  
 Length 125 in.  
 Diameter: 15 in.  
 Suspension Provisions: 14 and 30 in.

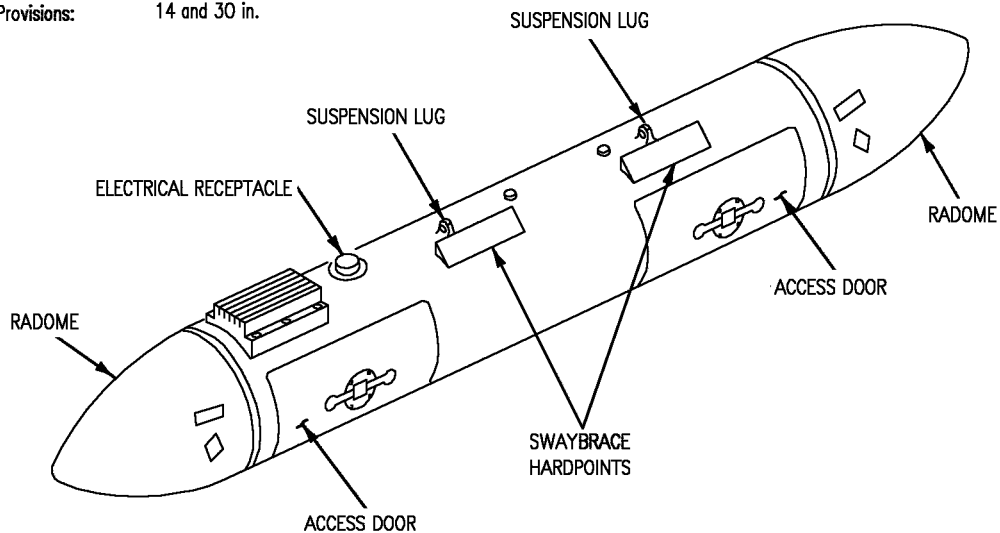


Figure 2-54. Data Pod (Typical)

### PHYSICAL CHARACTERISTICS:

Weight: 600 lb.  
 Dimensions:  
 Length 25 in.  
 Diameter: 108 in.  
 Suspension Provisions: 30 in.

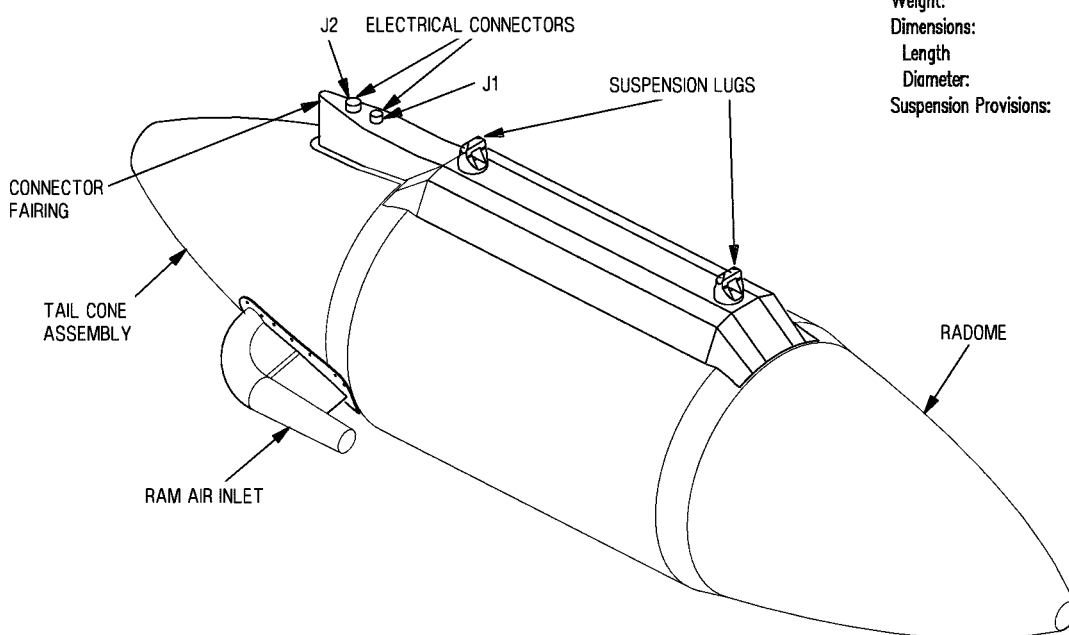
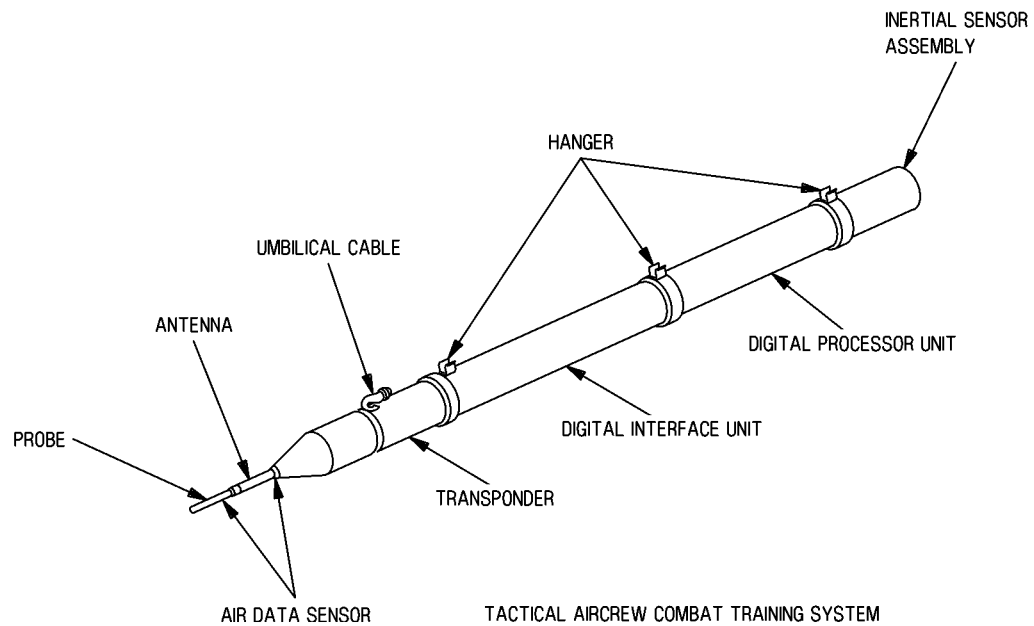
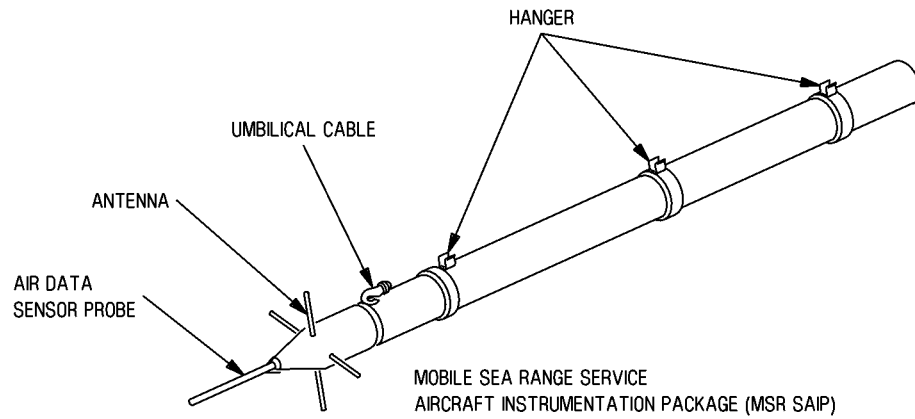


Figure 2-55. ARQ-56 (ATARS) Data Link Mini Pod

**PHYSICAL CHARACTERISTICS:**

	TACTS	SAIP
Weight:	72 lb.	152 lb.
Dimensions:		
Length:	138 in.	148 in.
Diameter:	5 in.	5 in.
Suspension Provisions:	LAU-7	LAU-7



**Figure 2-56. Instrumentation Packages**

## Description

### PHYSICAL CHARACTERISTICS:

Weight: 400 lb.  
 Dimensions:  
 Length: 92 in.  
 Height: 10.1 in.  
 Suspension Provisions: 14 in.

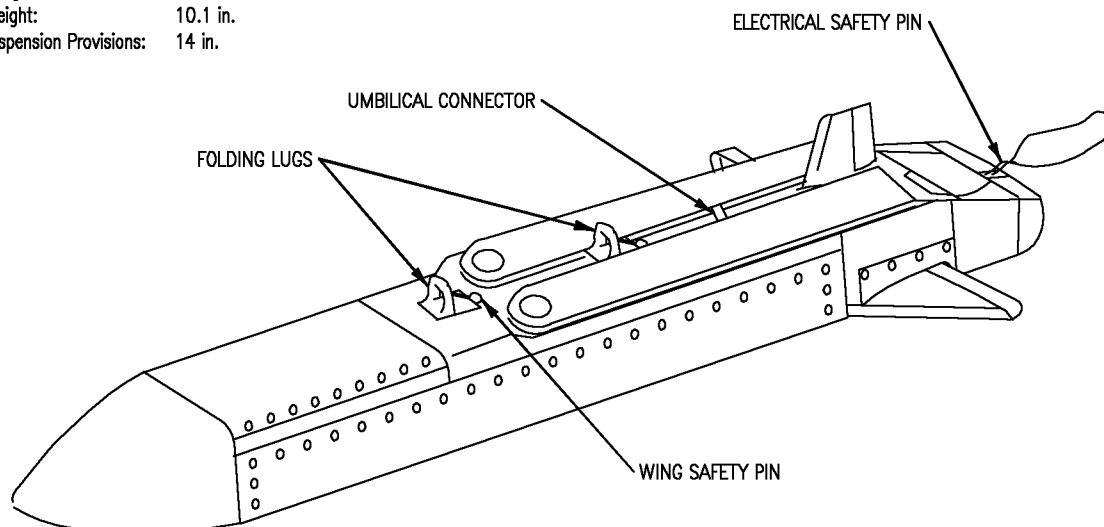


Figure 2-57. Tactical Air Launched Decoy (TALD)

### PHYSICAL CHARACTERISTICS:

Weight: 375 lb.  
 Dimensions:  
 Length: 92 in.  
 Height: 10.1 in.  
 Suspension Provisions: 14 in.

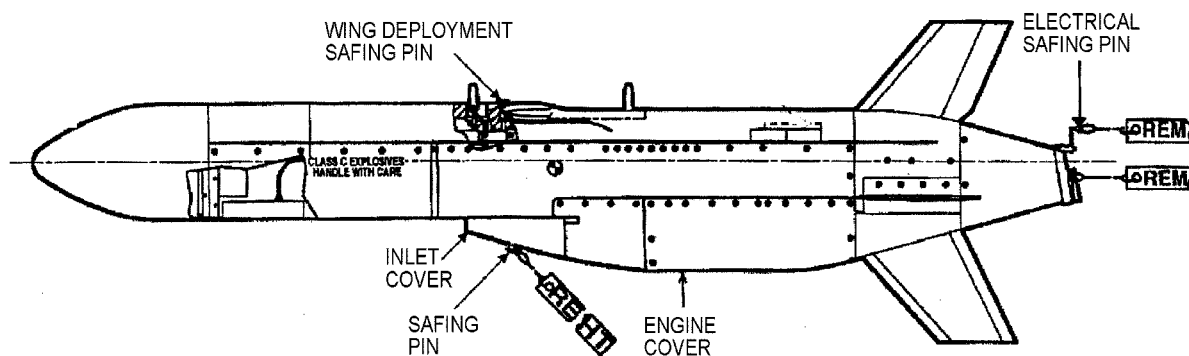
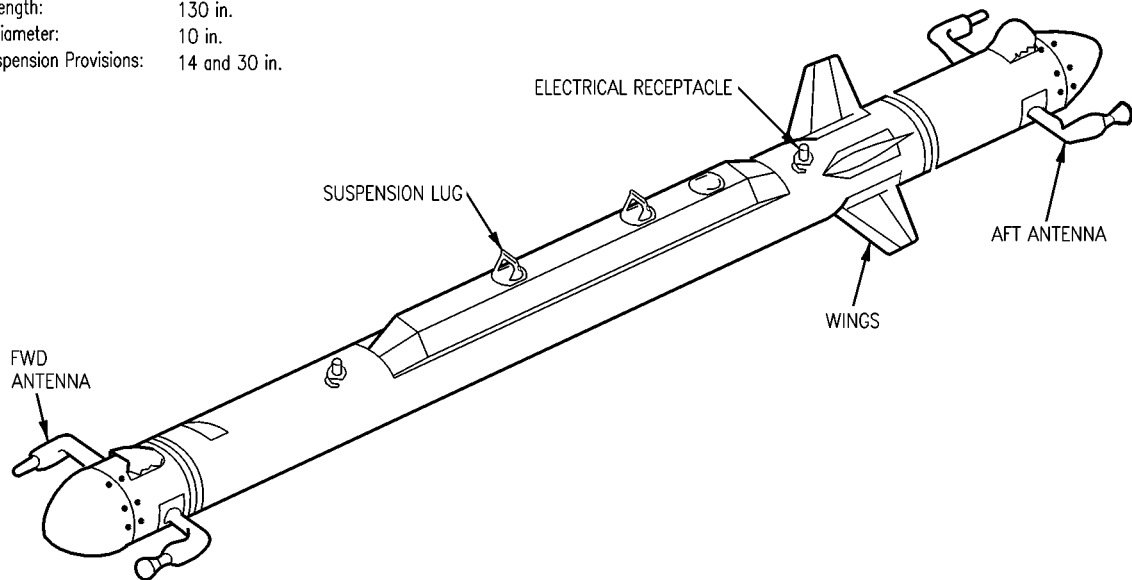


Figure 2-58. Improved Tactical Air Launched Decoy (ITALD)

**PHYSICAL CHARACTERISTICS:**

Weight: 236 lbs.  
Dimensions:  
Length: 130 in.  
Diameter: 10 in.  
Suspension Provisions: 14 and 30 in.



**Figure 2-59. AN/ALQ-167(V) Countermeasures Set**

2-215. **ARMAMENT SUPPORT EQUIPMENT (ASE).** ASE includes all equipment whose primary function is support of the aircraft-installed armament system and used primarily by the Aircraft Intermediate Maintenance Department (AIMD), Marine Aviation Logistics Squadron (MALS), and/or operational squadron. ASE is subdivided into two categories: Armament Handling Equipment (AHE) and Armament Systems Test Equipment (ASTE). For the purpose of this manual, the ASE will not be broken down into its subcategories

2-216. The following ASE can be used for handling, loading weapons/stores, and testing purposes on the F/A-18 aircraft. Identification of the weapon/store with ASE equipment is provided in Table 5-7. The listed order does not indicate preference or priority of use or preclude the use of other authorized ASE.

2-217. **Aero 51 Munitions Trailer.** The Aero 51 munitions trailer (Figure 2-60) is a transport vehicle consisting of an automotive-type chassis and a flat-deck body. The chassis has two axles and four single wheels equipped with pneumatic tires. The center section of the nonskid flat deck is hinged and can be opened to provide a hatchway across the full width of the vehicle. Hinged deck panels have double rails with holes at intervals to provide a mounting base for cradles and adapters.

2-218. **MHU-126 Munitions Trailer.** The MHU-126 munitions trailer (Figure 2-61) is a four wheeled pneumatic tired vehicle. The trailers are equipped with a self contained hydraulic brake system with expanding type brakes at each wheel, which are activated by a surge brake mounted on the drawbar. The rear wheels contain a mechanical parking brake operated by a lever located on the port side of the trailer.

## A1-F18AE-LWS-000

### Description

#### PHYSICAL CHARACTERISTICS:

Weight: 2200 lb.  
Dimensions:  
Length: 126 in.  
Width: 83.75 in.  
Height: 32 in.  
Capacity: 8500 lb.

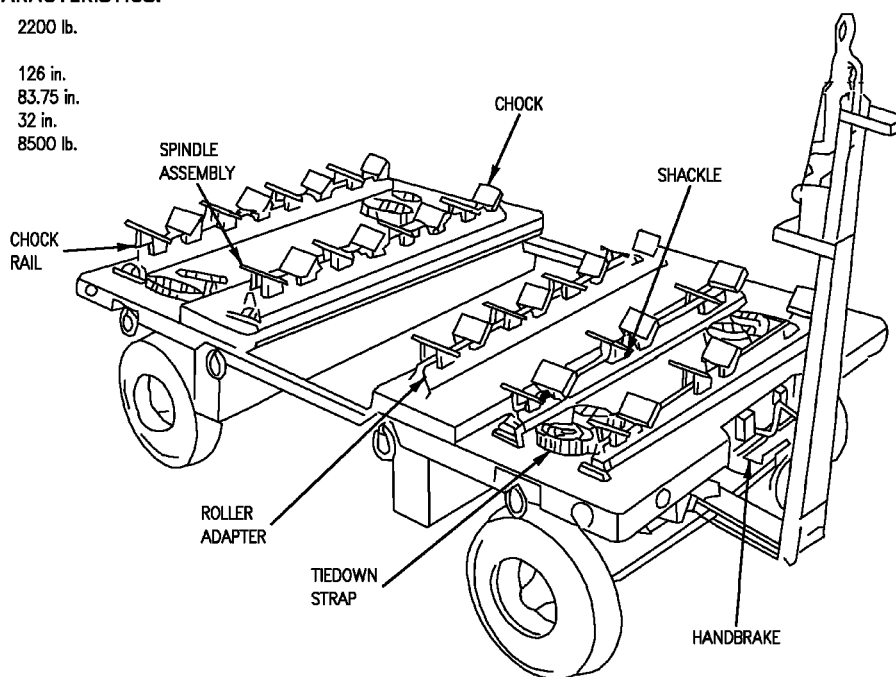
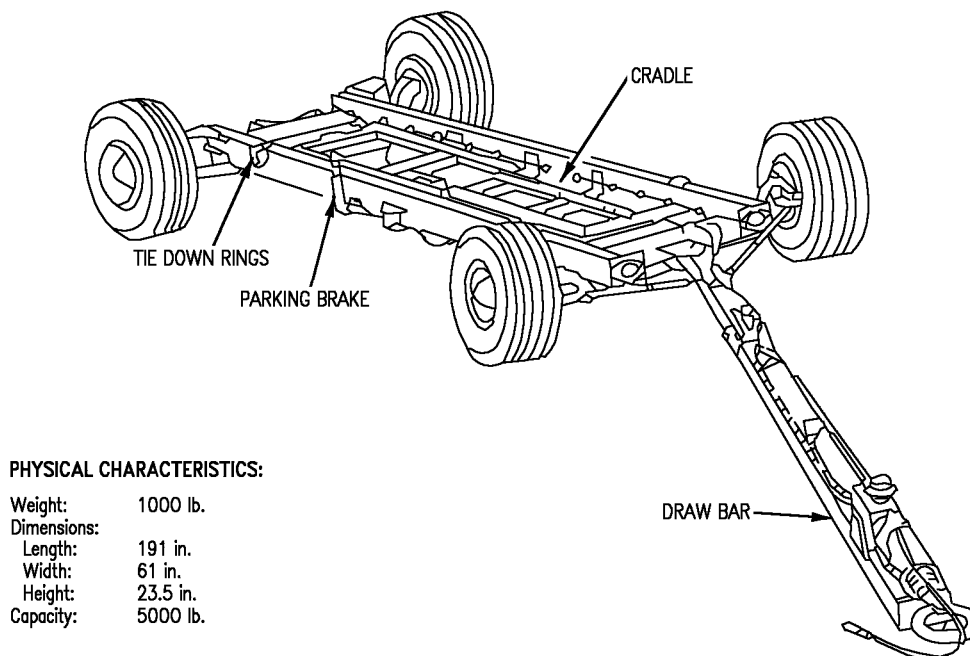


Figure 2-60. Aero 51 Munitions Trailer



#### PHYSICAL CHARACTERISTICS:

Weight: 1000 lb.  
Dimensions:  
Length: 191 in.  
Width: 61 in.  
Height: 23.5 in.  
Capacity: 5000 lb.

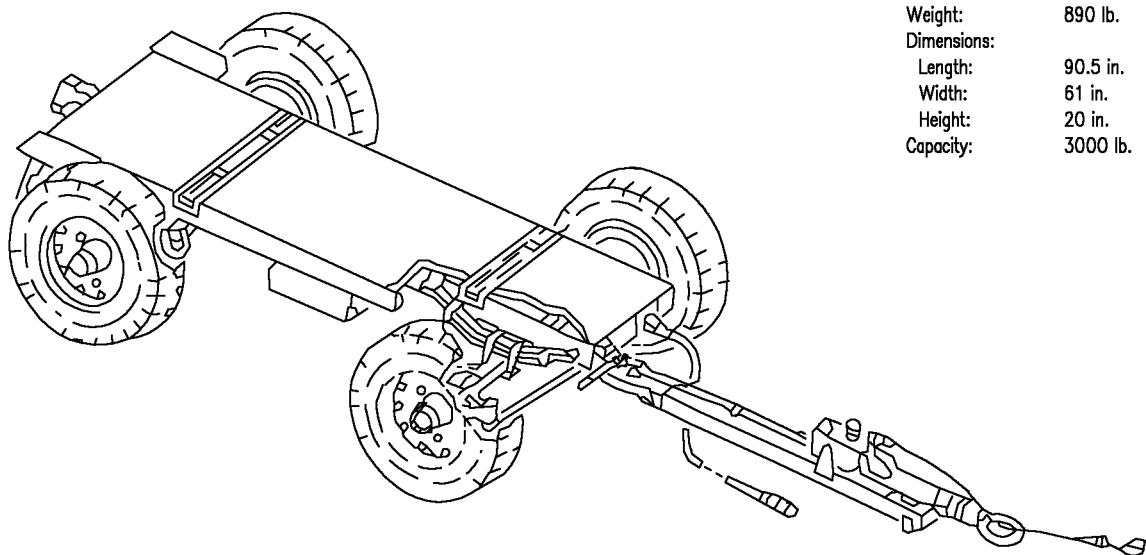
Figure 2-61. MHU-126 Munitions Trailer

**2-219. MHU-151 Munitions Trailer.** The MHU-151 munitions trailer (Figure 2-62) is a transport vehicle consisting of a chassis and a lightweight flatbed aluminum body. The chassis has two axles and four wheels with pneumatic tires. The trailer is equipped with a towbar, multiple leaf springs, running lights, a self-contained hydraulic surge brake system, and mechanical parking brakes. The flatbed has two trackways with clamp bolts for securing various weapon cradles, adapters, etc., and can be equipped with a stake rack for use in transporting ancillary gear and light cargo.

**2-220. MHU-185 Munitions Trailer.** The MHU-185 munitions trailer (Figure 2-63) is a four-wheeled vehicle with leaf-spring suspension system, pneumatic tires, and automotive knuckle-type steering. The flatbed deck is equipped with a dual track for anchoring the weapon adapters and a portable plywood decking for use in rocket build-up. A stake rack assembly is also available for transporting bulk material. The trailer is equipped with a pintle hook at the rear to allow for tandem towing.

**2-221. A/M32K-4/-4A Rough Terrain Trailer.** The A/M32K-4/-4A rough terrain trailer (Figure 2-64) is a transport vehicle consisting of a chassis and a lightweight flatbed aluminum body. The chassis has two axles and four single wheels equipped with pneumatic tires. A torque box provides strength and rigidity to the body. Two sections of the nonskid flatbed can be removed to enable a forklift truck to load and unload the trailer. The trailer is equipped with a tow bar, multiple leaf springs, service brakes, and parking brakes. The trailer is provided with 12 cradle tie-down fittings to hold weapon cradles securely on the bed.

**2-222. Mk 7 Series Bomb Trailer.** The Mk 7 series bomb trailer (Figure 2-65) can be positioned with a towing vehicle or manpower. The trailer is primarily intended for use at shore installations. The Mk 7 trailer consists of a frame assembly, steering mechanism assembly, brake assembly, hydraulic system, and cradle roller assembly. The Mk 7 trailer steering mechanism includes a drawbar handle and fork assembly. The brake lever



**PHYSICAL CHARACTERISTICS:**

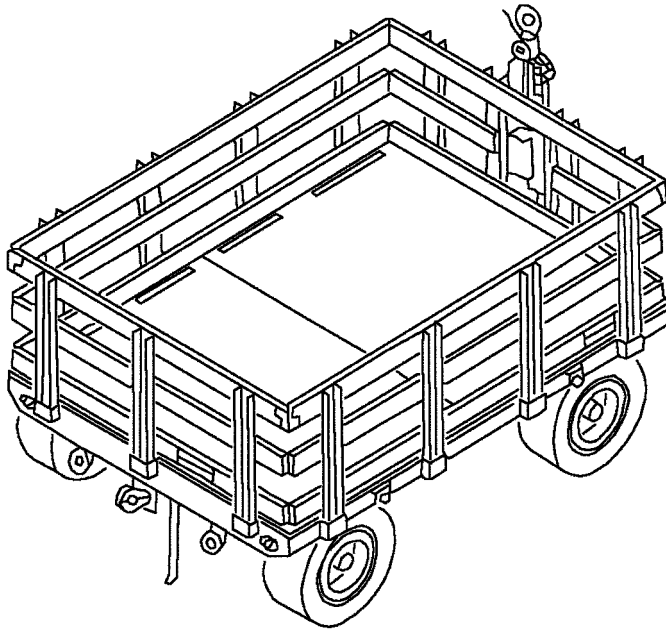
Weight:	890 lb.
Dimensions:	
Length:	90.5 in.
Width:	61 in.
Height:	20 in.
Capacity:	3000 lb.

**Figure 2-62. MHU-151 Munitions Trailer**

**Description**

**PHYSICAL CHARACTERISTICS:**

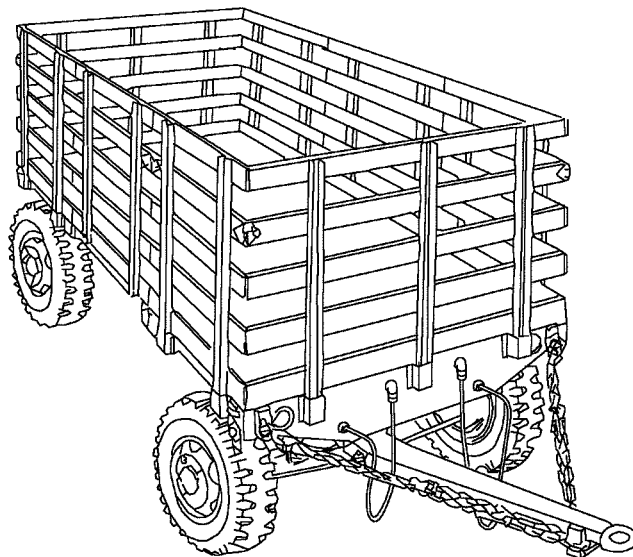
Weight: 1000 lb.  
Dimensions:  
Length: 155.5 in.  
Height: 56 in.  
Capacity: 4000 lb.



**Figure 2-63. MHU-185 Munition Trailer**

**PHYSICAL CHARACTERISTICS:**

Weight: 2490 lb.  
Dimensions:  
Length: 168 in.  
Width: 72 in.  
Height: 40 in.  
Capacity: 8000 lb.

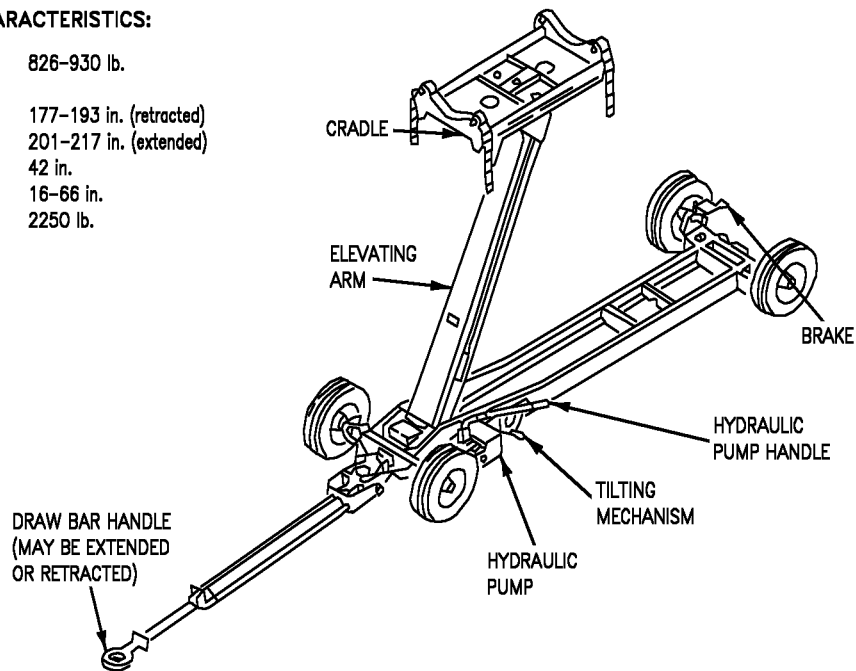


**Figure 2-64. A/M32K-4A Rough Terrain Trailer**



**PHYSICAL CHARACTERISTICS:**

Weight:	826-930 lb.
Dimensions:	
Length:	177-193 in. (retracted) 201-217 in. (extended)
Width:	42 in.
Height:	16-66 in.
Capacity:	2250 lb.



**Figure 2-65. Mk 7 Series Bomb Trailer**

is located on the trailer aft end and, when actuated, locks the rear wheels. The hydraulic system control lever controls the elevating arm assembly and is located at the trailer forward end. The cradle roller assembly is mounted on the elevating arm assembly and is controlled with a hand wheel. The cradle can be tilted in a fore-and-aft position with the hand wheel. The cradle can also be moved laterally from the centerline of the cradle.

**2-223. HLU-288/E Bomb Hoist.** The HLU-288/E bomb hoist (Figure 2-66) is a hand crank-operated, single-cable portable hoisting device. The HLU-288/E is equipped with a brake and ratchet to prevent self-lowering of weapon loads.

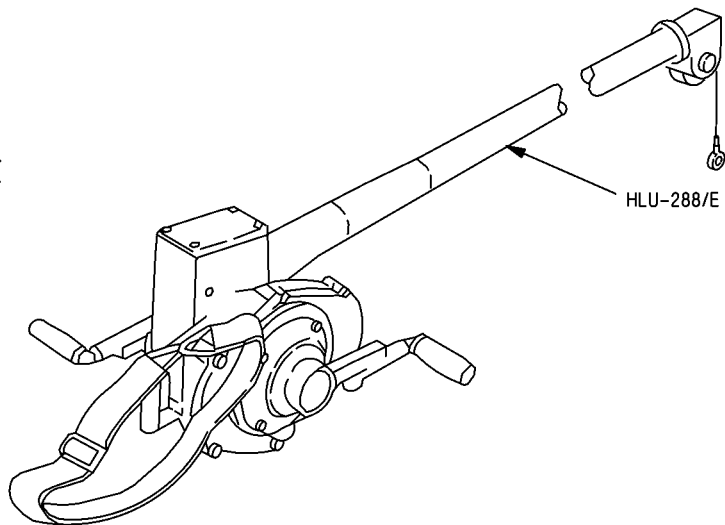
**2-224. HLU-196 Bomb Hoisting Unit.** The HLU-196 bomb hoisting unit (Figure 2-67) is a lightweight, portable, gasoline engine (HLU-196B/E) or electric motor (HLU-196D/E) driven unit that can be operated by one person. The hoist consists of a gasoline engine or electric motor, speed reducing gear box and brake, a cable assembly and storage drum incorporating a clutch and a boom. All components and controls are mounted on a two-wheeled, welded aluminum frame assembly.

**2-225. Weapon Loading Hoist Adapter (74D750006).** The weapon loading hoist adapter (74D750006) (Figure 2-68) consists of two assemblies. The left adapter, which is installed on the left side of the pylon, is numbered 74D750006-1001. The right adapter, which is installed on the right side of the pylon, is numbered 74D750006-1002. The adapters are installed on the pylon and VER during loading and unloading operations when a hoist is used. The adapter provides support for the boom of various bomb hoists for loading and unloading. Each adapter consists of two steel mounting pad assemblies that attach over the GSE button lugs on the side of the pylons. A crossbar with a bracket for mounting the bomb hoist boom and a quick release pin for securing the eyelet on the bomb hoist cable is also supplied. The bracket can be moved and pinned into different positions of the crossbar corresponding to center of gravity changes for the various weapons.

**A1-F18AE-LWS-000**  
**Description**

PHYSICAL CHARACTERISTICS:

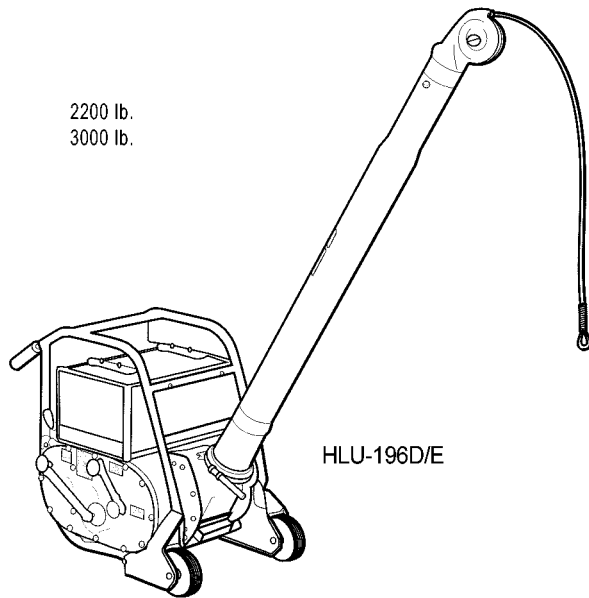
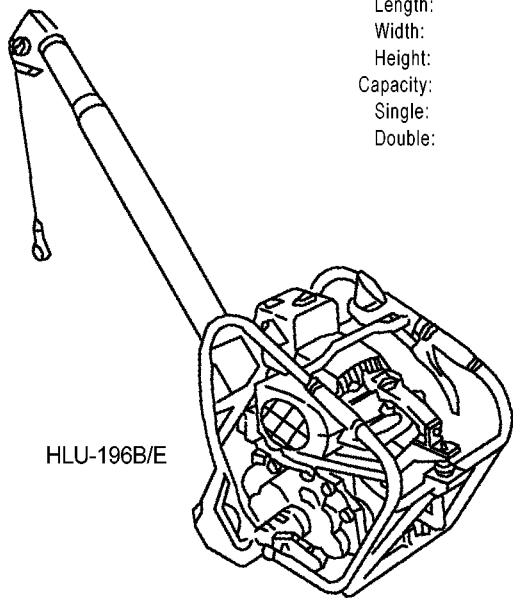
Weight: 54 lb.  
Dimensions:  
Length:  
Width:  
Height:  
Capacity:  
Single: 2000 lb.  
Double: 4000 lb.



**Figure 2-66. HLU-288/E Bomb Hoist**

PHYSICAL CHARACTERISTICS

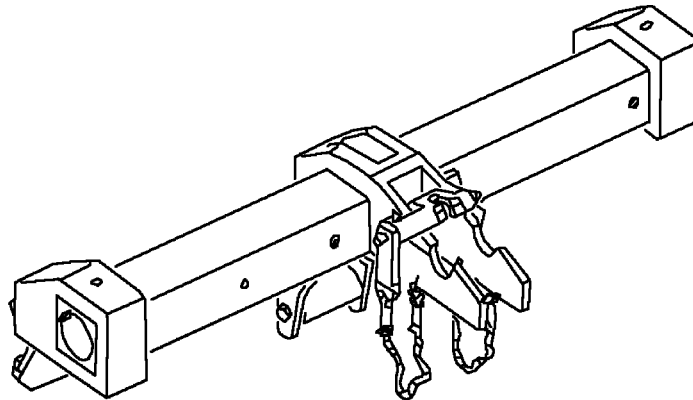
	HLU-196B/E	HLU-196D/E
Weight:	80 lb.	121.5 lb. (w/batteries)
Dimensions:		
Length:	43 in.	
Width:	18 in.	
Height:	24 in.	
Capacity:		
Single:	2000 lb.	2200 lb.
Double:	4000 lb.	3000 lb.



**Figure 2-67. HLU-196 Series Bomb Hoisting Unit**

**PHYSICAL CHARACTERISTICS:**

Weight: 21 lb.  
Dimensions:  
Length: 20 in.  
Width: 8 in.  
Height: 6 in.



**Figure 2-68. Weapon Loading Hoist Adapter (74D750006)**

2-226. **ADK-448 Trolley Adapter.** The ADK-448 trolley adapter (Figure 2-69) is a steel weldment consisting of a formed perforated steel band, two TEEs and two base and side plates with quick-release pins. The steel band is formed to fit the contour of a single AN/AWW-13 data pod. The ADK-448 trolley adapter side plates are secured to single store trolley adapters 74D750004 with the quick-release pins for hoisting the data pod.

2-227. **ADU-764 Series Extension Adapter.** The ADU-764 series extension adapter (Figure 2-70) is a machined steel part equipped with a lanyard and quick release pin. The adapter provides additional length to one of the single hoist ordnance loading (SHOLS) trolley legs to permit proper hoist cable clearance across the GBU-24B/B, GBU-31(V)4/B weapons systems.

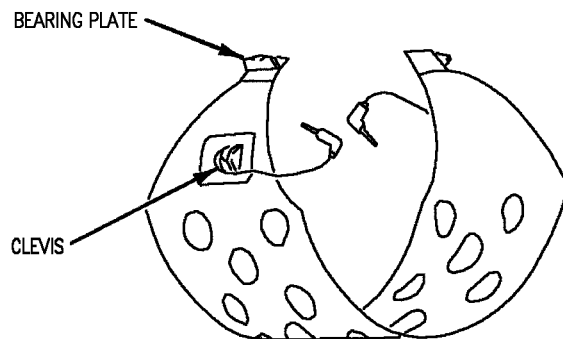
2-228. **HLK-275/A and HLK-276A Hoisting Bands.** The HLK-275/A (short heavy gauge) and HLK-276A (heavy gauge) hoisting bands (Figure 2-71) are steel bands used with portable bomb hoists for loading various combinations of weapons/stores. These bands are used in conjunction with the HLK-279 anchor fitting, depending on the configuration. The HLK-275/A band has 13 holes spaced 2 inches on center, even numbered from 0 to 24; The HLK-276A band has 28 holes spaced 2 inches on center, even numbered from 0 to 54. The HLK-279 anchor fitting is used to attach the eye of the hoisting cable to the band or attach the single store trolley adapter.

2-229. **AIM-7 Hoist Loading Adapter (74D750030).** The AIM-7 hoist loading adapter (74D750030) (Figure 2-72) is used to hoist load fuselage station AIM-7s. The hoist loading adapter (74D750030) attaches to the fuselage and flap rib assembly. The adapter is composed of an I-beam rail joined to special end mounts, a deadman friction brake mechanism, and a trolley roller bracket with provisions to support a bomb hoist unit. The aft end mount is attached to the wing by a quick release pin through a 5/8-inch diameter hole provided in the trailing edge inboard flap hinge fitting. The forward end mount is held in the side of the fuselage by a quick

**A1-F18AE-LWS-000**  
**Description**

**PHYSICAL CHARACTERISTICS:**

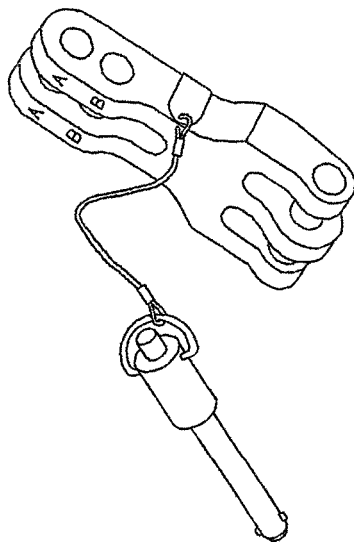
Weight: 2 lb.  
Dimensions:  
Length: 15 in.  
Width: 10 in.  
Capacity: 3000 lb.



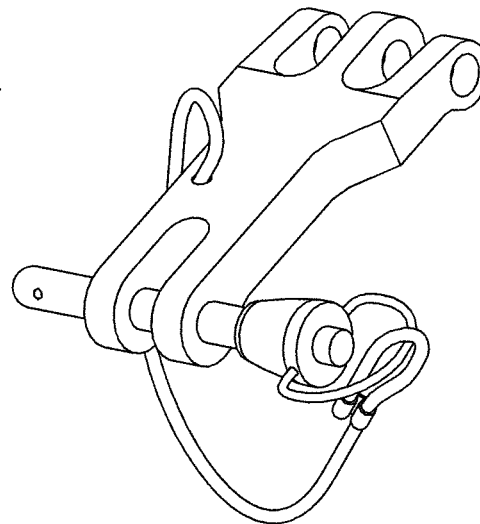
**Figure 2-69. ADK-448 Trolley Adapter**

**PHYSICAL CHARACTERISTICS:**

Weight: .45 lb.  
Dimensions:  
Length: 4.05 in.  
Width: 2.0 in.  
Height: .86 in.  
Capacity: 1500 lb.



**ADU-764A/E**

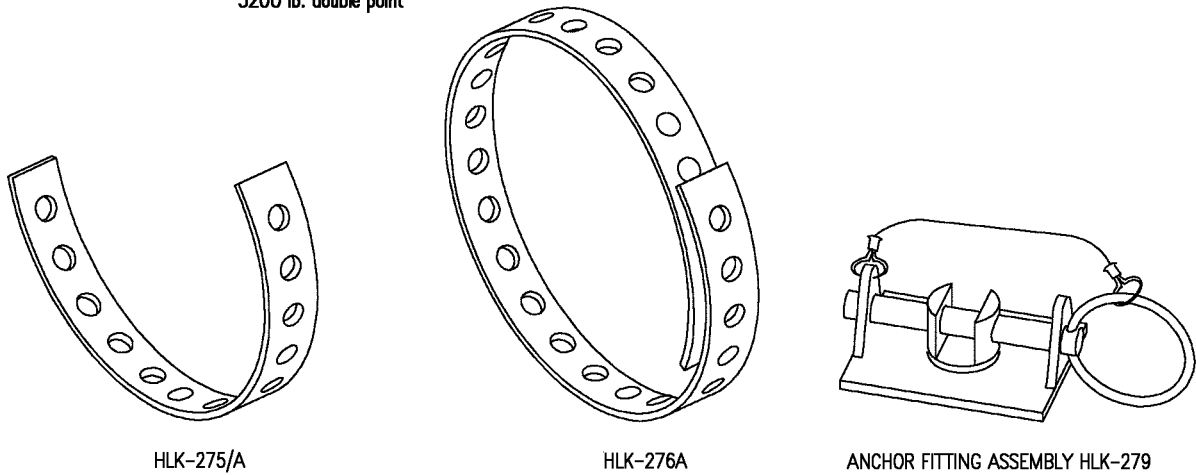


**ADU-764/E**

**Figure 2-70. ADU-764/E Extension Adapter**

**PHYSICAL CHARACTERISTICS:**

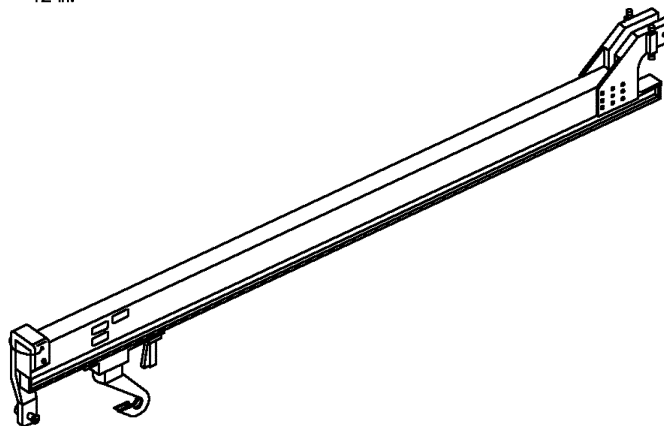
	HLK-275/A	HLK-276A
Weight:	0.6 lb.	1.5 lb.
Dimensions:		
Length:	27.75 in.	57.75 in.
Width:	2.12 in.	2.12 in.
Capacity:	2500 lb.	1500 lb. single point 3200 lb. double point



**Figure 2-71. HLK-275/A and HLK-276A Hoisting Bands**

**PHYSICAL CHARACTERISTICS:**

Weight:	75 lb.
Dimensions:	
Length:	90 in.
Width:	10 in.
Height:	12 in.



**Figure 2-72. AIM-7 Hoist Loading Adapter (74D750030)**

**Description**

release pin. A friction brake bearing pad rests against the I-beam and can be released by pulling a triggering pistol grip assembly attached to the roller bracket for repositioning the bomb hoist during missile movement. A swivel fitting under the trolley and brake cradles the pulley shaft and supports the bomb hoist unit during hoisting.

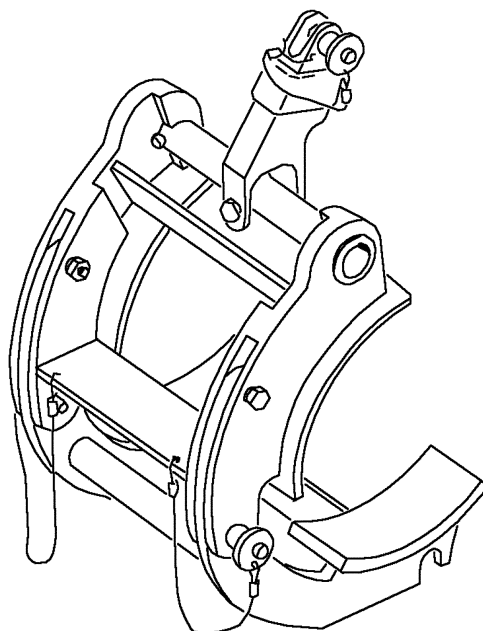
**2-230. AIM-7 Missile Cradle Adapter (74D750003).** The AIM-7 missile cradle adapter (74D750003) (Figure 2-73) is used for hoist loading AIM-7 missiles on fuselage stations. The AIM-7 missile cradle adapter is a steel weldment consisting of two hinged supports joined by a pair of tubular members. Both end supports contain a cutout to clear the waveguide protrusion on the missile body and have riveted, rubber fabric composite pads that bear against the cylindrical shell to support the load while hoisting.

**2-231. LAU-115 Missile Launcher Adapter (74D750032).** The LAU-115 missile launcher adapter (74D750032) (Figure 2-74) is used to hoist load a preloaded LAU-115/A, LAU-115A/A, or LAU-115B/A. The adapter consists of two identical steel assemblies. Each assembly contains a pulley. A hub on the lower portion of each assembly mates with the groove in the launcher rail. A threaded bolt with a handle passes through one half of the assembly through the launcher and into the other half assembly.

**2-232. VER Hoist Adapter (74D750024).** The VER and Canted VER hoist adapters (74D750024) (Figure 2-75 and Figure 2-76) are used in conjunction with the VER single trolley (74D750023) to hoist load weapons on a VER and canted VER previously installed on the aircraft. The adapter consists of a steel beam structure that retains two rollers. The rollers are designed to prevent the hoisting cable from contacting the VER. Two receptacles and ball lock pins are provided to attach the cable and fittings to the support and to the VER lower fitting.

**PHYSICAL CHARACTERISTICS:**

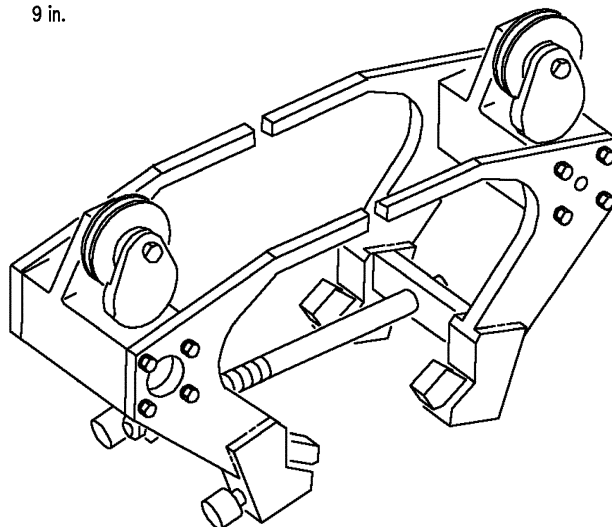
Weight:	20 lb.
Dimensions:	
Length:	16 in.
Width:	12 in.
Height:	13 in.



**Figure 2-73. AIM-7 Missile Cradle Adapter (74D750003)**

**PHYSICAL CHARACTERISTICS:**

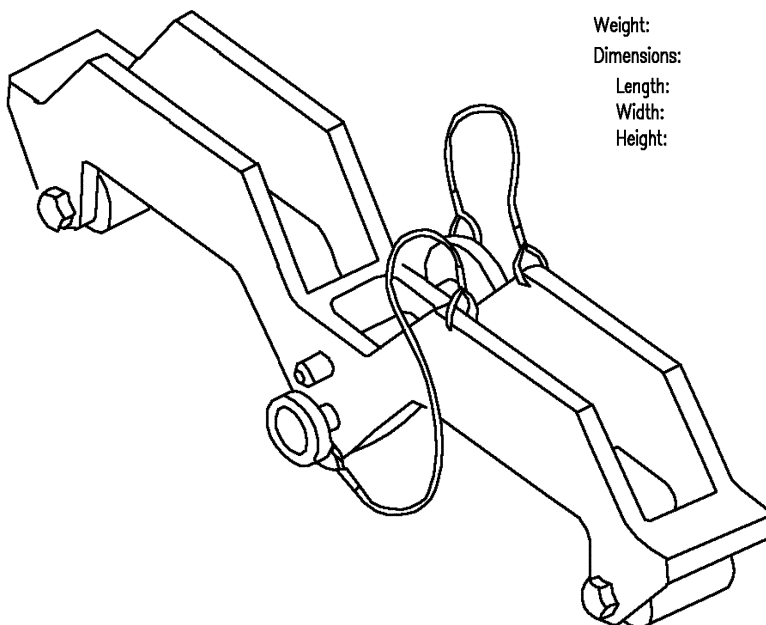
Weight: 15 lb.  
Dimensions:  
Length: 6 in.  
Width: 8 in.  
Height: 9 in.



**Figure 2-74. LAU-115 Missile Launcher Adapter (74D750032)**

**PHYSICAL CHARACTERISTICS:**

Weight: 5 lb.  
Dimensions:  
Length: 14 in.  
Width: 2 in.  
Height: 2.1 in.

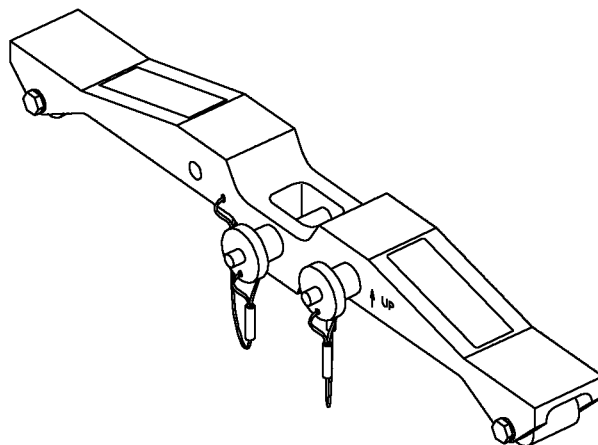


**Figure 2-75. VER Hoist Adapter (74D750024-1001)**

## Description

## PHYSICAL CHARACTERISTICS:

Weight:	5 lbs.
Dimensions:	
Length:	17.3 in.
Width:	1.75 in.
Height:	2.1 in.



**Figure 2-76. CVER Hoist Adapter (74D750024-1003)**

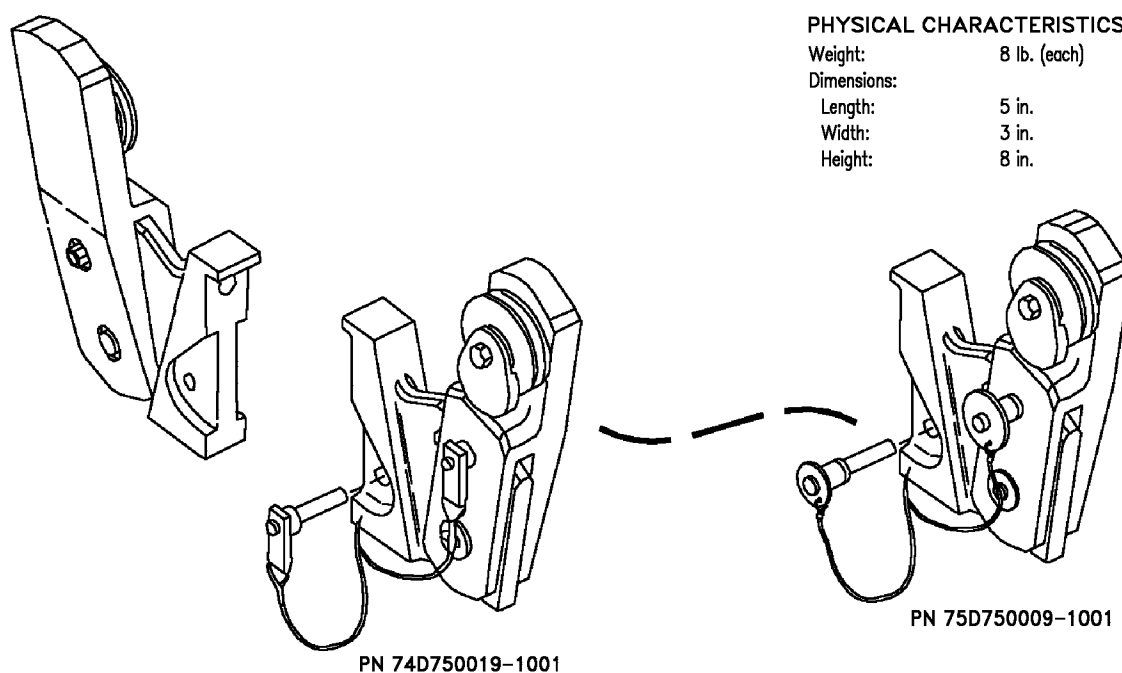
2-233. **Maverick Trolley (74D750019/75D750009).** The Maverick Trolley (Figure 2-77) is used during loading and unloading a preloaded LAU-117 launcher. The trolleys are installed on the launchers GSE fittings. The adapter consists of a neutral, steel sheave assembly and bracket. The design of the adapter provides clearance between pylon and launcher for engaging the suspension hooks. The pulleys accommodate a 0.25 inch diameter cable.

2-234. **HLK-268 Missile Launcher Trolley.** The HLK-268 missile launcher trolley (Figure 2-78) is used during loading and unloading a preloaded LAU-118 launcher. The trolley consists of two bracket assemblies that individually connect to the launcher. The design of the trolley provides a clearance between pylon and launcher for engaging the suspension hooks. The pulleys accommodate a 0.25-inch diameter cable.

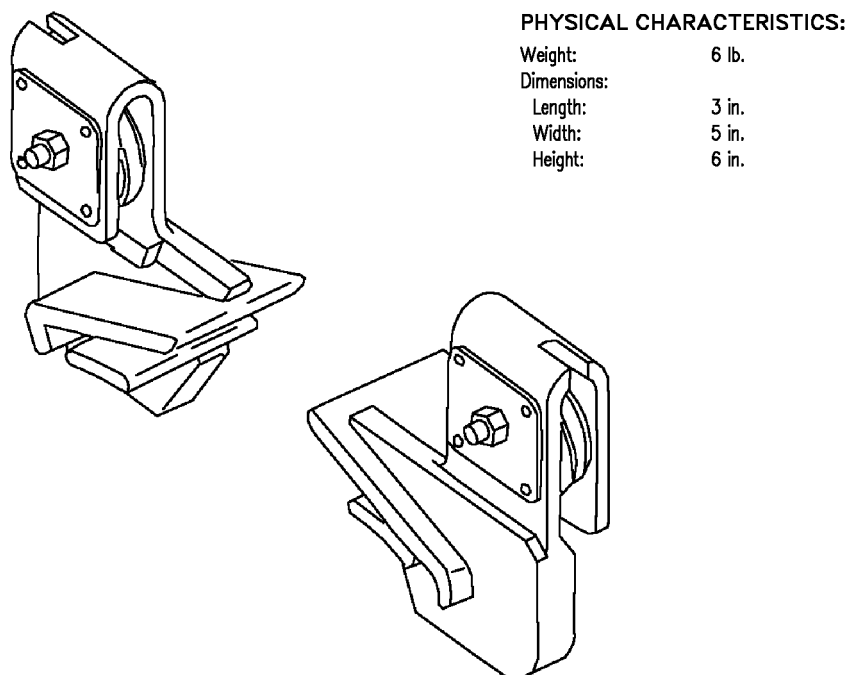
2-235. **Single Store Trolley Adapter (74D750004).** The single store trolley adapter (74D750004) (Figure 2-79) is used in conjunction with the HLK series hoisting bands for hoist loading weapons onto a VER or the BRU-32 bomb rack. The adapter consists of two neutral, steel pulley bracket assemblies that individually pin to anchor fitting protruding through the HLK series hoisting bands. The design of the brackets provides clearance between pylon and weapon for engaging the suspension hooks. The pulleys accommodate a 0.25-inch diameter cable.

2-236. **VER Single Trolley (74D750023).** The VER single trolley (74D750023) (Figure 2-80) is used to hoist load weapons on a VER previously installed on the aircraft. The trolleys are used in conjunction with the HLK series hoisting bands. The trolleys consist of a steel pulley bracket assembly that includes two pulleys and a bracket that pins to anchor fittings on the HLK series hoisting bands. One trolley is required on each side of the





**Figure 2-77. Maverick Trolley (74D750019/75D750009)**

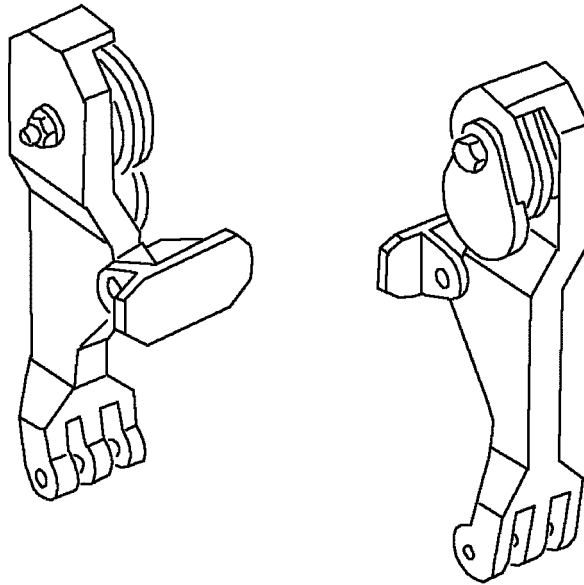


**Figure 2-78. HLK-268 Missile Launcher Trolley**

**Description**

**PHYSICAL CHARACTERISTICS:**

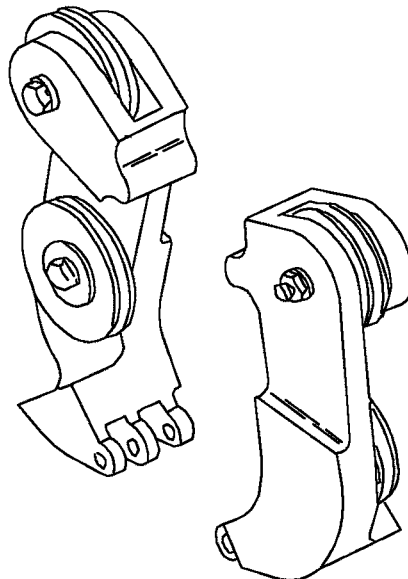
Weight: 8 lb.  
Dimensions:  
Length: 11 in.  
Width: 5 in.  
Height: 5 in.



**Figure 2-79. Single Store Trolley Adapter (74D750004)**

**PHYSICAL CHARACTERISTICS:**

Weight: 4.5 lb.  
Dimensions:  
Length: 4 in.  
Width: 1.4 in.  
Height: 8 in.



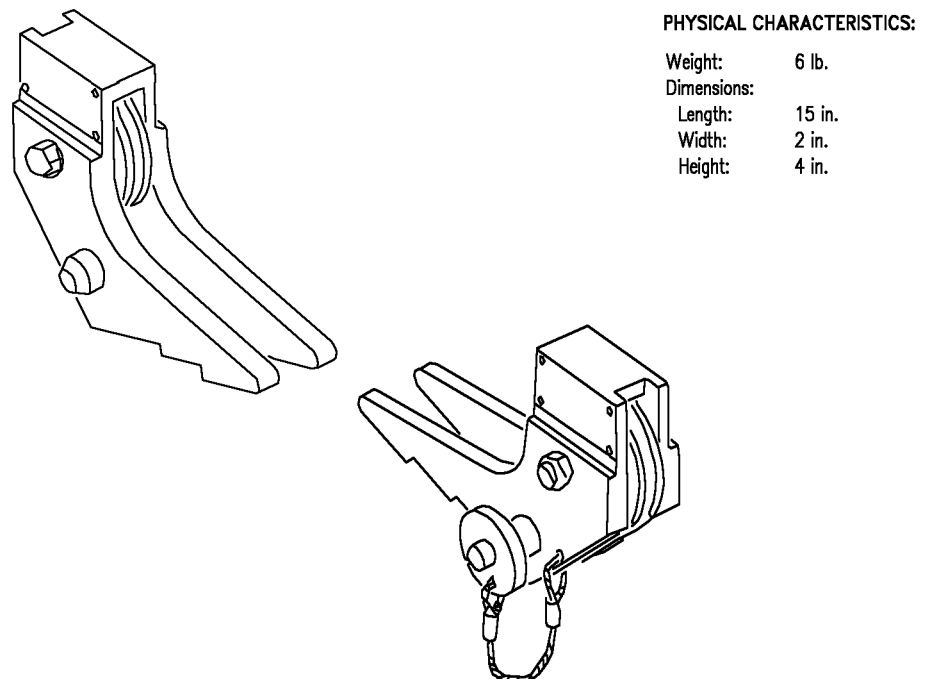
**Figure 2-80. VER Single Trolley (74D750023)**

weapon. The design of the trolley provides clearance between weapon and VER for engaging the suspension hooks and is used with 10.75-inch to 14-inch diameter weapons.

**2-237. VER Trolley Adapter (74D750000).** The VER trolley adapter (74D750000) (Figure 2-81) is used during loading and unloading a preloaded VER. The trolleys are installed on the VER hoist fitting adapter and used with bomb hoists. The adapter consists of two neutral, steel pulley bracket assemblies that individually connect on the top of the VER and are secured by quick release pins. The design of the brackets provides clearance between pylon and VER for engaging the suspension hooks. The pulleys accommodate a 0.25-inch diameter cable.

**2-238. Walleye II Trolley Adapters (74D750077) (ATARS).** The Walleye II Trolley (Figure 2-82) is used to load/unload the AN/ARQ-56 data pod from the BRU-32 rack. It consist of two assemblies, a trolley, and a spacer. They are pinned together for storage. The trolley assembly consists of a machined mounting plate that resembles an arm with a bushing mounted sheave at the top to provide lifting points for the cable of the bomb hoist as the cable is reeled in and out. At the bottom of the arm is a flange hole for attaching the trolley to the AN/ARQ-56 hoist point (which has a retractable pin) by aligning the hole in the trolley with the hoist point. The spacer assembly consists of two spacers held together with a pin and two screws and is pinned to the hoist adapter beam during load/unloading of the store.

**2-239. HLK-217 and HLK-218 Multiple Stores Trolley Adapters.** The HLK-217 and HLK-218 multiple stores trolley adapters (Figure 2-83) consist of a fabricated weldment with MER connector link, TER attaching hole, release pin, and rotatable sheave. The trolley adapters are used, in pairs, to hoist load/unload JDAM



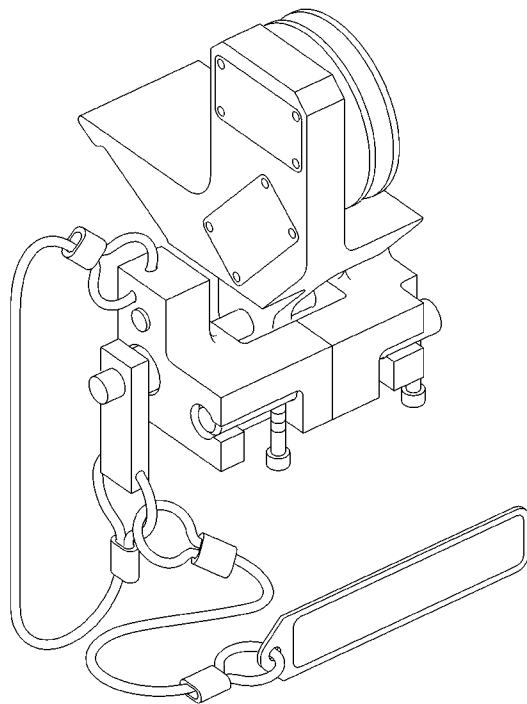
**Figure 2-81. VER Trolley Adapter (74D750000)**

## A1-F18AE-LWS-000

### Description

#### PHYSICAL CHARACTERISTICS:

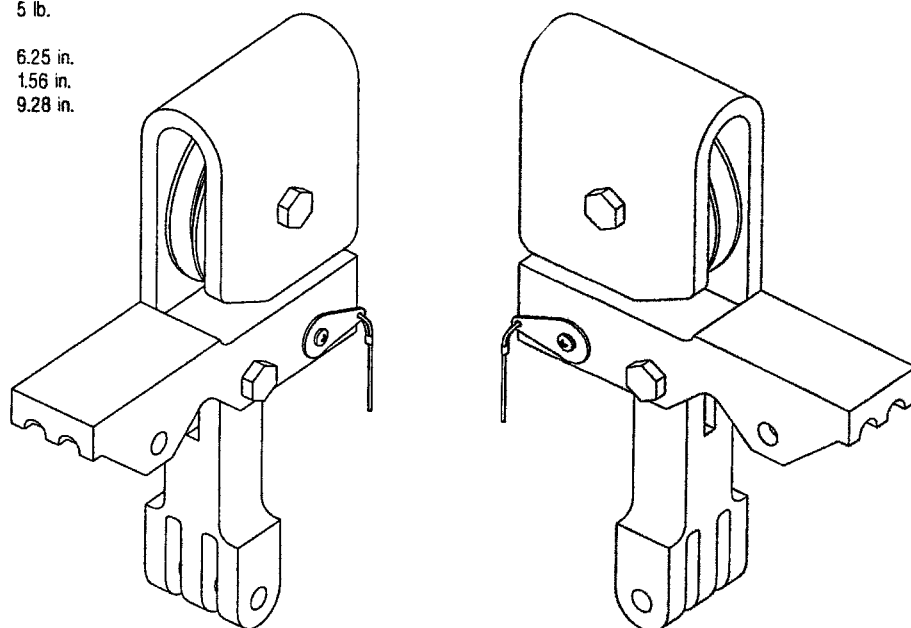
Weight: 6 lb.  
Dimensions:  
Length: 6 in.  
Width: 2 in.  
Height: 4 in.



**Figure 2-82. Walleye II Trolley Adapters**

#### PHYSICAL CHARACTERISTICS:

Weight: 5 lb.  
Dimensions:  
Length: 6.25 in.  
Width: 1.56 in.  
Height: 9.28 in.



**Figure 2-83. HLK-217/HLK-218 Multiple Stores Trolley Adapters**

weapons with BLU-109 bomb bodies to the parent rack. The adapter enables a hoist to double its effective load-raising capacity through mechanical reeving of the hoist cable.

2-240. **HLU-256/E Hoisting Bar.** The HLU-256/E manual hoisting bar (Figure 2-84) is used for handling and loading low drag general purpose (LDGP) bombs. The bar is made of steel with a movable nose plug connector that is provided with two threaded bosses for use in the nose of bombs with or without adapter boosters installed. The movable nose plug allows the bar to be used in the straight or "T" configurations. Either end of the bar may be inserted in the bomb fin for handling and loading. The HLU-256/E bar is authorized for use in lifting bombs up to and including the nominal 1000-pound variety.

2-241. **Adapter Transporter (74D750008).** The adapter transporter (74D750008) (Figure 2-85) is used to transport weapons, fuel tanks, and launchers with various skids/trailers. The transporter consists of two identical assemblies that can be connected together by MER/TER rails.

2-242. **Aero 12 Bomb Skid.** The Aero 12 bomb skid (Figure 2-86) is a wheelbarrow type of skid consisting of a cradle-type frame mounted on two rubber-tire wheels and equipped with two supporting legs. The skid is provided with two tubular steel handles that can be quickly latched or unlatched by a handle release on the aft end of each handle. The wheels are braked by means of two brake shoes that are applied to the wheels by the supporting legs when the skid is lowered, so that the supporting legs are in contact with the deck. The brakes are released when the skid is raised sufficiently for the supporting legs to clear the deck. The skid is equipped with adjustable chocks on the bed of the frame to locate the load in its proper position on the skid. Two hold-down brackets on each side of the skid accommodate the long or short handles and provide for attaching the tiedown straps.

PHYSICAL CHARACTERISTICS:

Weight:	21 lb.
Dimensions:	
Length:	52.5 in.
Capacity:	1000 lb.

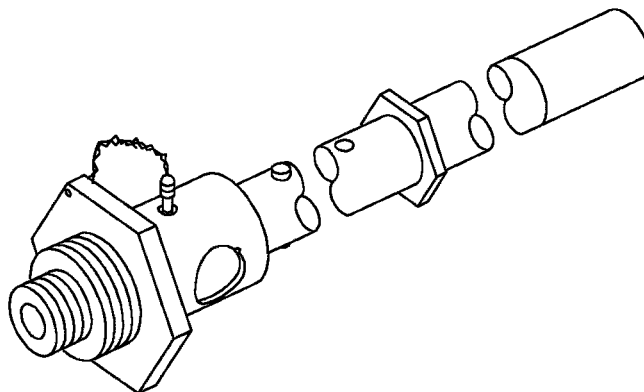
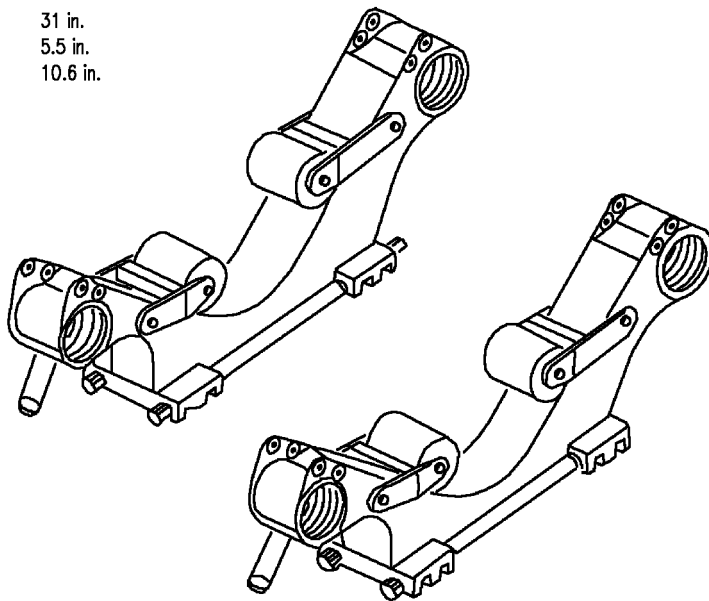


Figure 2-84. HLU-256/E Hoisting Bar

**Description**

**PHYSICAL CHARACTERISTICS:**

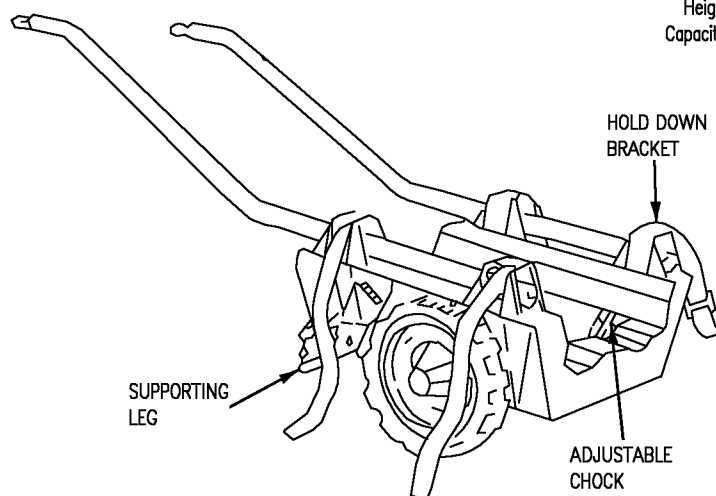
Weight:	46 lb. (each)
Dimensions:	
Length:	31 in.
Width:	5.5 in.
Height:	10.6 in.



**Figure 2-85. Adapter Transporter (74D750008)**

**PHYSICAL CHARACTERISTICS:**

Weight:	170 lb.
Dimensions:	
Length:	28 in.
Width:	26 in.
Height:	21.8 in.
Capacity:	1250 lb.



**Figure 2-86. Aero 12 Bomb Skid**

2-243. **MHU-191 Munitions Transporter.** The MHU-191 munitions transporter (Figure 2-87) is a welded tubular frame with four rubber-tire wheels and a telescoping draw bar. A section of drilled steel bars is welded to the main frame and provides the mounting holes for attaching various adapters. Brake release is accomplished by a hand lever on the draw bar. The front wheels are equipped with drum-type brakes.

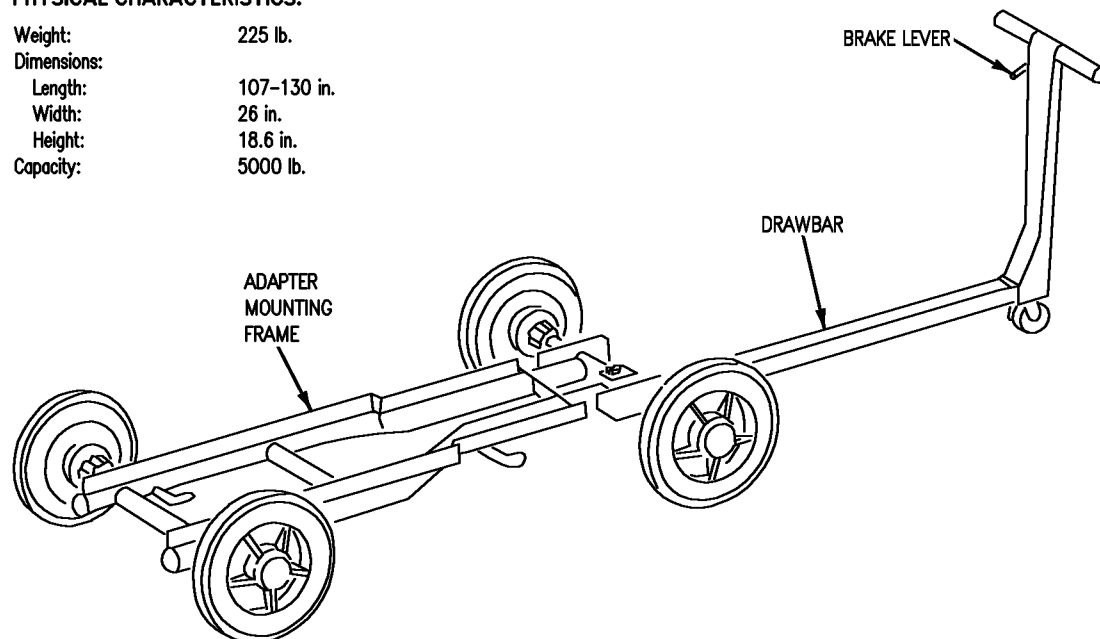
2-244. **MHU-130 Conveyor System.** The MHU-130 conveyor system (Figure 2-88) transports rounds from the transporter to the aircraft system and simultaneously transports spent cases and cleared rounds from the aircraft system to the transporter. The conveyor system, in use, is mounted on top of the transporter. The conveyor system consists of a chute support assembly, three ammunition chutes, two element chutes, an exit unit assembly, an interface unit assembly, an entrance unit assembly, and a flexible drive shaft.

2-245. **MHU-131 Loader Ammunition Transporter.** The loader ammunition transporter (Figure 2-89) is capable of storing either unfired 20mm rounds or empty cases in a controlled manner and moving these rounds or cases through the exit and entrance ends during operating. The transporter consists of an ammunition drum mounted in a drum adapter assembly. The ammunition drum is a cylindrical structure that consists of an outer drum structure, an inner drum, two scoop disc assemblies, and two cover assemblies. The drum adapter assembly is a box-type structure that permits stacking of the transporters. The transporter can be locked onto associated weapon skids/trailers by use of four hinge plates and quick-release pins. Foldout steps, located at the exit end of the transporter, provide personnel with the additional height required to connect the system to the aircraft.

2-246. **GFE-21/A/E32K-7 Linkless Ammunition Loading System (LALS).** The linkless ammunition loading system (Figure 2-90) is capable of storing, protecting, transporting, and simultaneously loading and unloading

**PHYSICAL CHARACTERISTICS:**

Weight:	225 lb.
Dimensions:	
Length:	107-130 in.
Width:	26 in.
Height:	18.6 in.
Capacity:	5000 lb.

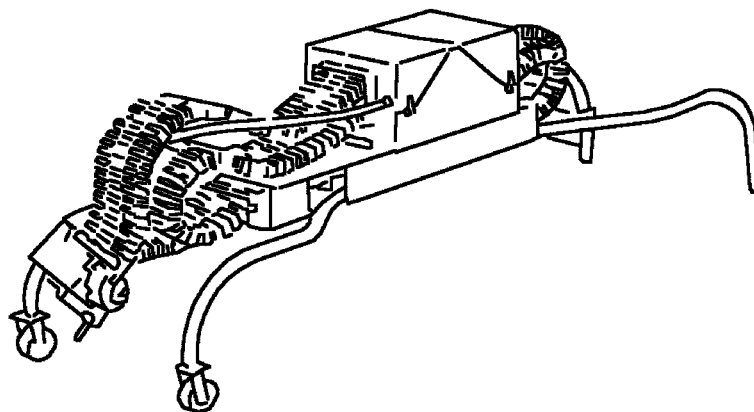


**Figure 2-87. MHU-191 Munitions Transporter**

**Description**

**PHYSICAL CHARACTERISTICS:**

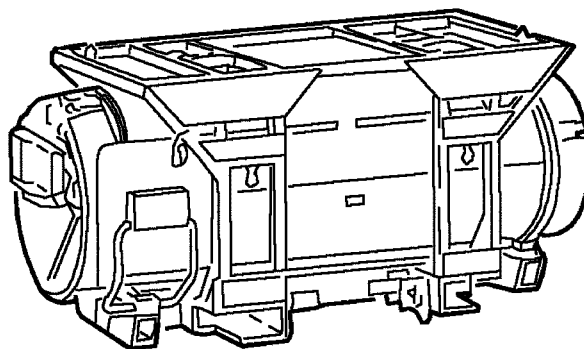
Weight: 175 lb.  
Dimensions:  
Length: 96 in.  
Width: 27 in.  
Height: 29 in.



**Figure 2-88. MHU-130 Conveyor System**

**PHYSICAL CHARACTERISTICS:**

Weight:  
Empty: 875 lbs.  
Loaded: 1660 lbs.  
Dimensions:  
Length: 66.5 in.  
Width: 26 in.  
Height: 30.33 in.

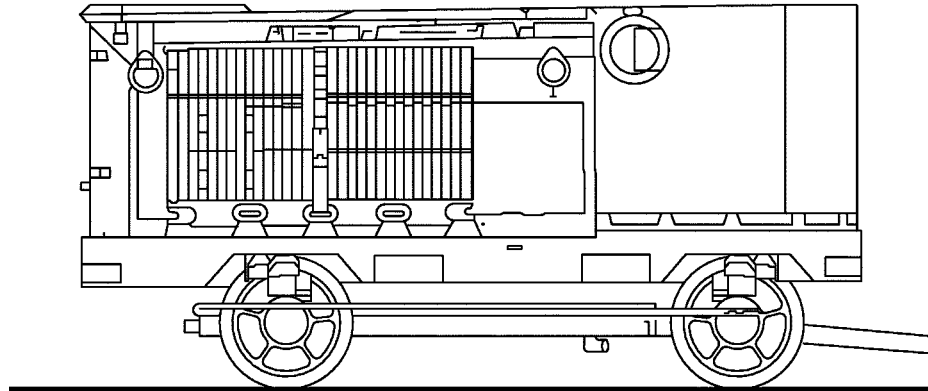


**Figure 2-89. MHU-131 Loader Ammunition Transporter**



PHYSICAL CHARACTERISTICS:

Weight: 994 lbs (empty)  
Dimensions:  
Length: 83 in.  
Width: 27.8 in.



**Figure 2-90. GFE-21A/E32K-7 Linkless Ammunition Loading System**

1800 rounds of 20mm ammunition. The LALS is a completely mechanical system that can be manually operated or power driven using a standard 1/2-inch square drive tool. The LALS consists of the storage container assembly, transfer unit assembly, conveyor assembly, and the aircraft interface unit. The LALS is compatible with a multitude of standard skids and trailers, including the MHU-191/M, MHU-126/M, MHU-151/M, MHU-202/M, and the A/M32K- 4A.

**2-247. ADU-775/E Transport Adapter.** The ADU-775/E transport adapter assembly (Figure 2-91) is used in pairs and in conjunction with Aero 58A, front and rear, adapters on the MHU-191/M munitions transporter for handling and transporting of the JSOW to appropriate aircraft.

**2-248. ADK-598/U32K-1 TALD Transport Adapter.** The TALD transport adapter (Figure 2-92) is a lightweight aluminum weldment with a curved outer shell and a square shaped inner cradle. The curved outer shell allows the adapter to interface with common support equipment while the square inner cradle area conforms to the square fuselage of the TALD. Four stops (two with retaining pins) are provided for securing the adapter to the support equipment.

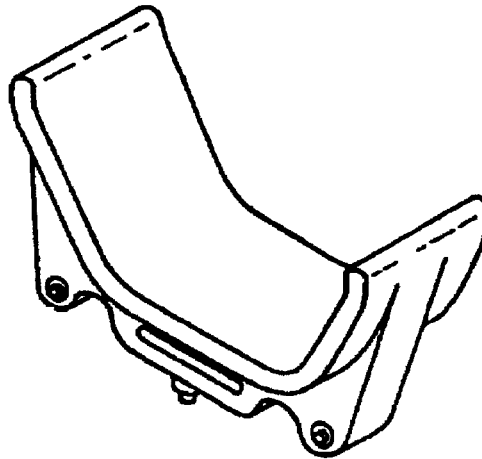
**2-249. Aero 9 Bomb Skid Adapter.** The Aero 9 bomb skid adapter (Figure 2-93) is an aluminum collapsible box with the sides and bottom strengthened by stiffeners. Manual handling can be accomplished by use of two hand holes provided on each side of the adapter. The Aero 9 bomb skid adapter utilizes two spring loaded latches to secure it to the Aero 12 skid. Various weapon components and other miscellaneous items can be carried/transported by Aero 9 bomb skid adapter.

**2-250. Aero 39B Bomb Skid Adapter.** The Aero 39B bomb skid adapter (Figure 2-94) consists of seven hexagonal aluminum tubes welded together. The assembly is hinged at one end for loading. Three handles are

**A1-F18AE-LWS-000**  
**Description**

**PHYSICAL CHARACTERISTICS:**

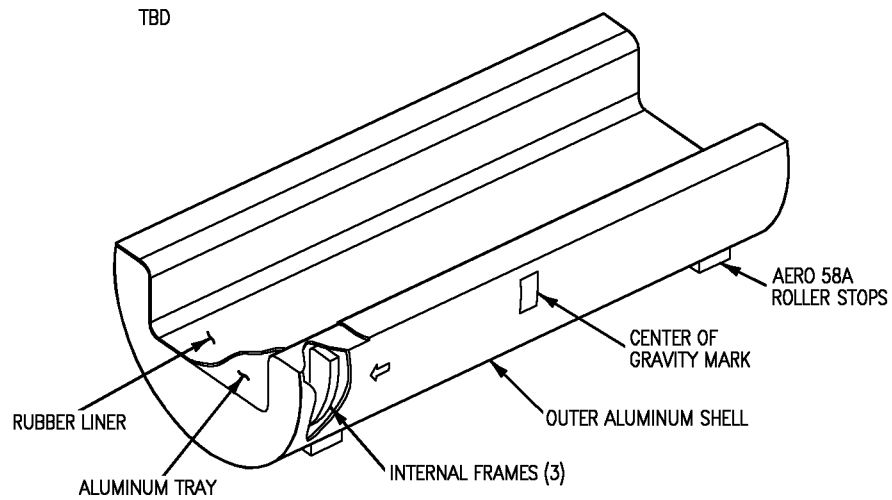
Weight:	12.4 lbs.
Dimensions:	
Length:	16.52 in.
Width:	6.0 in.
Height:	10.79 in.



**Figure 2-91. ADU-775/E Transport Adapter**

**PHYSICAL CHARACTERISTICS:**

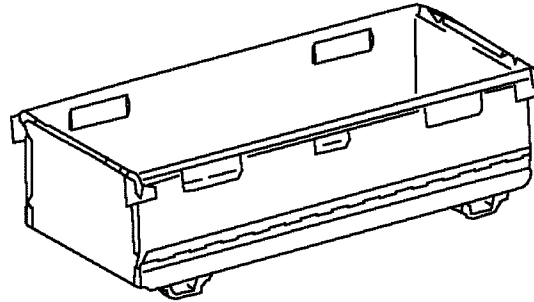
Weight:	TBD
Dimensions:	
Length:	30 in.
Width:	14 in.
Height:	TBD



**Figure 2-92. ADK-598/V32K1 TALD Adapter**

**PHYSICAL CHARACTERISTICS:**

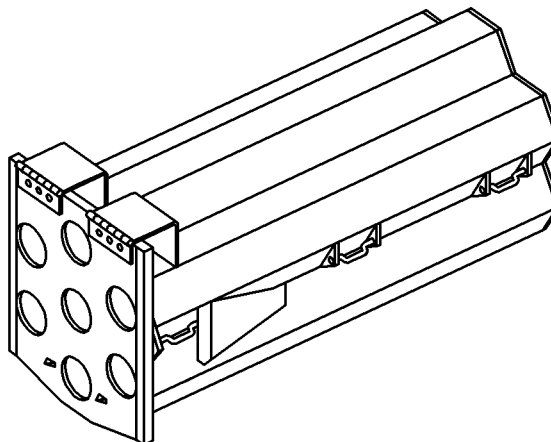
Weight: 24 lb.  
Dimensions:  
Length: 42.9 in.  
Width: 18.3 in.  
Height: 12.6 in.  
Capacity: 1000 lb.



**Figure 2-93. Aero 9 Bomb Skid Adapter**

**PHYSICAL CHARACTERISTICS:**

Weight: 33 lb.  
Dimensions:  
Length: 54 in.  
Width: 11.6 in.  
Height: 11.5 in.  
Capacity: 7 nitrogen bottles



**Figure 2-94. Aero 39B Bomb Skid Adapter**

**Description**

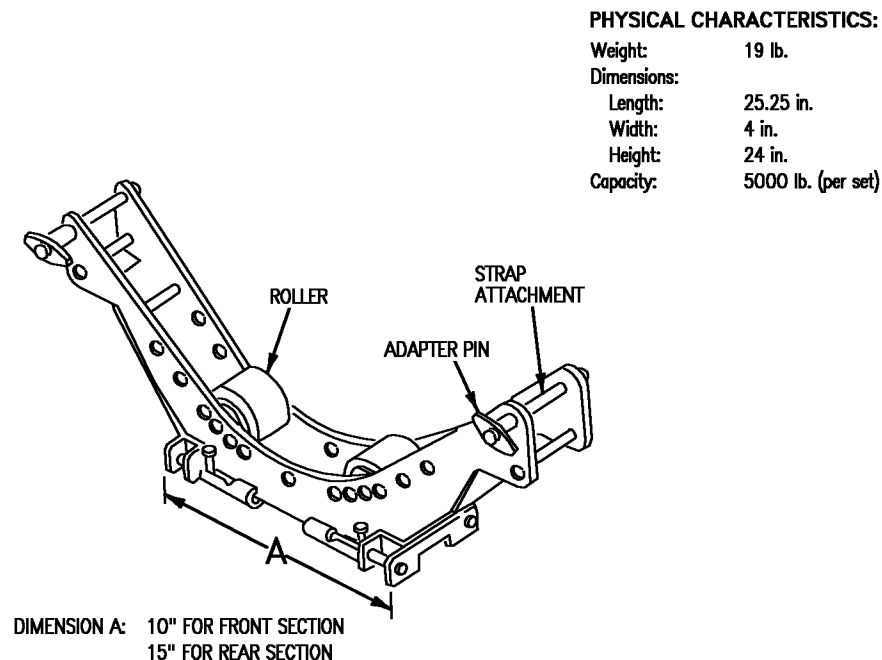
mounted on it for fitting. The Aero 39B bomb skid adapter is used with any flat surface skid or truck to transport and store nitrogen filled bottles used as a coolant for the LAU-7 series missile launcher.

2-251. **Aero 58A Skid Adapter.** The Aero 58A skid adapter (Figure 2-95) consists of a front and rear section. The two sections are similar, except that the front section has a 10-inch base and the rear section has a 15-inch base to fit the rails of the skid. Each adapter section has two removable rubber rollers that support the weapon. Nylon straps are provided to hold the weapon in place. The sections are attached to the skid with four spring-loaded pins that mate with the holes in the rails of the skid. The Aero 58A skid adapter is used to adapt various weapon skids for a wide variety of weapon loads.

2-252. **Aero 64A Soft Belt Adapter.** The Aero 64A soft belt adapter (Figure 2-96) consists of a flexible neoprene-covered woven wire sling. The adapter has slots at the ends for attaching tiedown straps. The adapter is also equipped with brackets for attaching it to the skid. Two Aero 64A soft belt adapters support a soft-skin weapon or store up to 30 inches in diameter on associated skids/trailers/adapters.

2-253. **Aero 64B Soft Belt Adapter.** The Aero 64B soft belt adapter (Figure 2-97) consists of a flexible, neoprene covered, woven wire sling. The adapter has slots at the ends for attaching tiedown straps. The adapter is also equipped with brackets for attaching it to the skid. Two Aero 64B soft belt adapters support a soft-skin weapon or store up to 20 inches in diameter on associated skids/adapters.

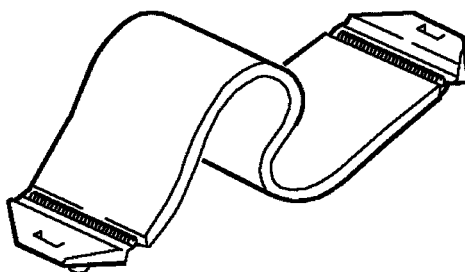
2-254. **Aero 71A Skid Adapter.** The Aero 71A skid adapter (Figure 2-98) consists of a welded aluminum angle frame, sheet aluminum deck, and steel tube stakes. The adapter is secured to a weapon skid by quick-release pins. An extruded aluminum track is provided around the edges of the flatbed for the attachment of the steel tubes stakes or other associated adapters.



**Figure 2-95. Aero 58A Skid Adapter**

**PHYSICAL CHARACTERISTICS:**

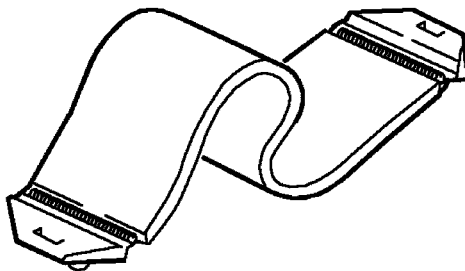
Weight:	10 lbs. (each)
Dimensions:	
Length:	25.8 in.
Width:	6.25 in.
Capacity:	2500 lb.



**Figure 2-96. Aero 64A Soft Belt Adapter**

**PHYSICAL CHARACTERISTICS:**

Weight:	14 lb. (each)
Dimensions:	
Length:	22.9 in.
Width:	6.25 in.
Capacity:	2500 lb.



**Figure 2-97. Aero 64B Soft Belt Adapter**

## Description

## PHYSICAL CHARACTERISTICS:

Weight:	210 lb.
Dimensions:	
Length:	90 in.
Width:	32 in.
Capacity:	4000 lb.

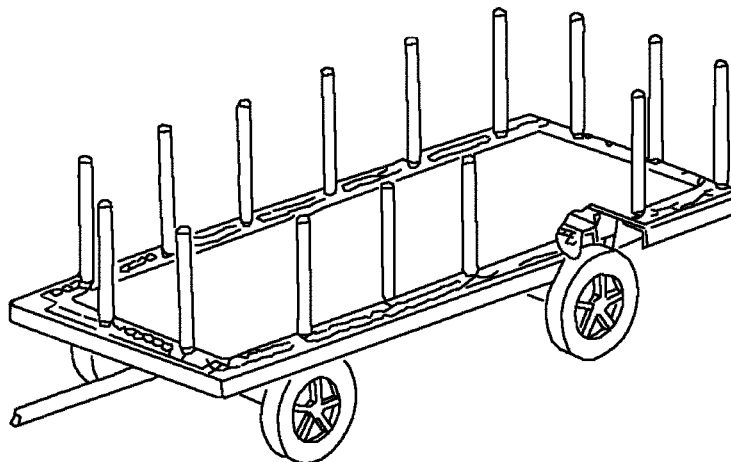


Figure 2-98. Aero 71A Skid Adapter

2-255. **Aero 73A Adapter.** The Aero 73A adapter (Figure 2-99) consists of two hollow-square steel assemblies. At each end of the underside of each assembly is an H-shaped steel flange with quick-release locking pin to allow attachment to the mounting rail of various weapon skids. The top surface of each assembly has a slot with a spindle arrangement that is used to clamp the height adapter to Aero 74A or Aero 75A skid-trailer adapters. The height adapters are interchangeable.

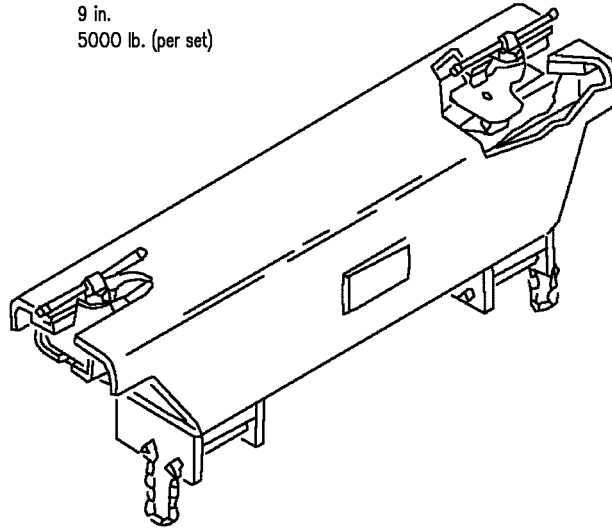
2-256. **Aero 74A Skid Trailer Adapter.** The Aero 74A skid trailer adapter (Figure 2-100) consists of three weapon support assemblies and two fork receptacle assemblies. The two upper weapon support assemblies are adjustable to accommodate weapons of various diameters. The lateral adjustment is made by rotating the adjustment screw mounted outboard of each longitudinal support assembly. Each longitudinal support assembly is mounted to the horizontal support tube assembly and is affixed with a sliding bar that is indexed from 0 to 6 inches for accommodating MER/TER/BRU-41/42 weapon clusters. The adjustment roller on each upper weapon support may be placed in either of three positions for MER/TER/BRU-41/42 compatibility, using quick-release pins.

2-257. **ADU-358/E Guided Missile Adapter.** The ADU-358/E guided missile adapter (Figure 2-101) consists of a foam pad mounted on a steel back. The ADU-358/E guided missile adapters provide soft-skin support capability for the support of the Sparrow III missile. The adapters are used in conjunction with the height adapters ADU-359/E and the small universal cradle MHU-63/E.

2-258. **ADU-359/E Height Adapter.** The ADU-359/E height adapter (Figure 2-102) consists of two aluminum side plates and one aluminum gusset plate bolted together. Two ADU-359/E height adapters are used with the ADU-358/E and MHU-63E small universal cradle.

**PHYSICAL CHARACTERISTICS:**

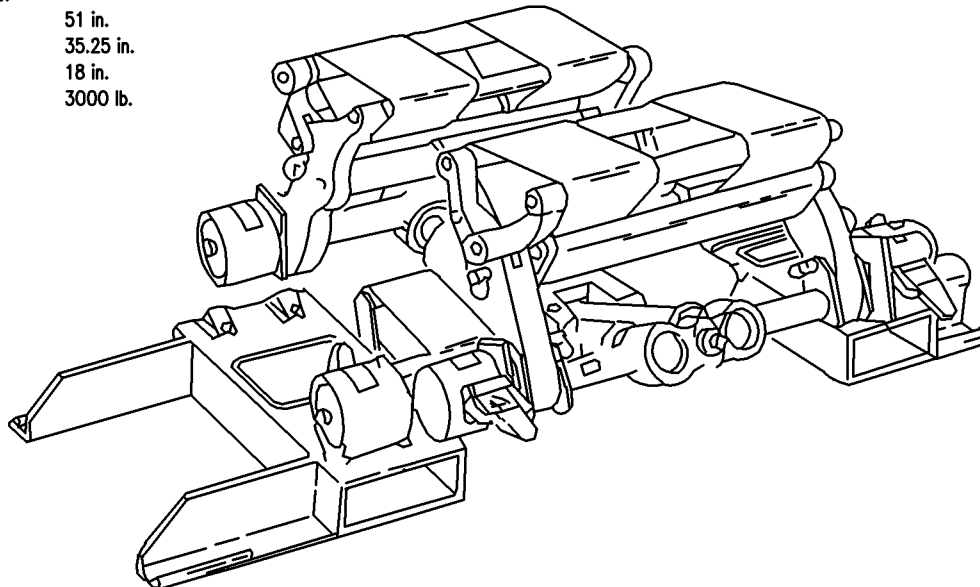
Weight: 32 lb.  
Dimensions:  
Length: 24 in.  
Width: 5 in.  
Height: 9 in.  
Capacity: 5000 lb. (per set)



**Figure 2-99. Aero 73A Adapter**

**PHYSICAL CHARACTERISTICS:**

Weight: 301 lb.  
Dimensions:  
Length: 51 in.  
Width: 35.25 in.  
Height: 18 in.  
Capacity: 3000 lb.

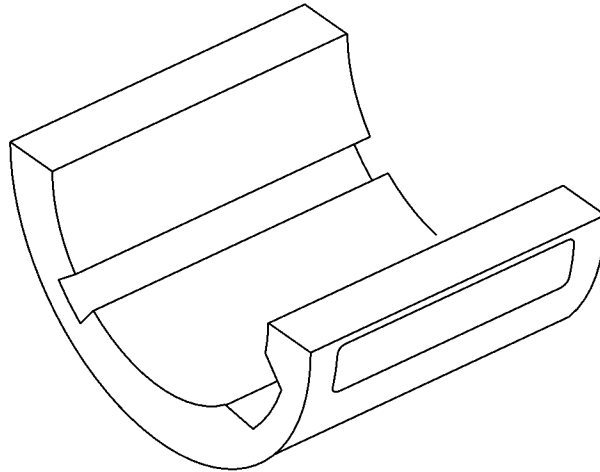


**Figure 2-100. Aero 74A Skid Trailer Adapter**

**Description**

**PHYSICAL CHARACTERISTICS:**

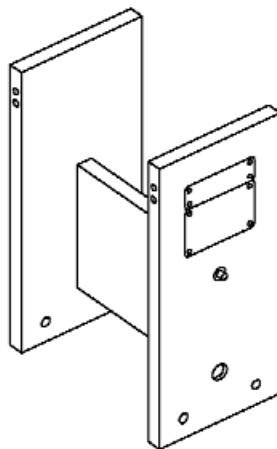
Weight: 2.4 lb.  
Dimensions:  
Length: 8 in.  
Width: 10.1 in.  
Height: 5 in.  
Capacity: 550 lbs.



**Figure 2-101. ADU-358/E Guided Missile Adapter**

**PHYSICAL CHARACTERISTICS:**

Weight: 14 lb.  
Dimensions:  
Length: 6.41 in.  
Width: 8.75 in.  
Height: 14 in.  
Capacity: 1800 lb. per set



**Figure 2-102. ADU-359/E Height Adapter**



2-259. **ADU-397/E Roller Cradle Adapter.** The ADU-397/E roller cradle adapter (Figure 2-103) is a steel weldment consisting of a cradle frame, two hard rubber-tire rollers with spring extended axles, four spring pins, and a tiedown belt. The rollers can be placed in any one of three positions for accommodating loads with diameters varying from 8 to 22 inches. The spring pins serve as fastening devices when installed on appropriate adapters. The ADU-397/E roller cradle adapter is used in pairs on the support beam of weapons skid loading lift adapter ADU-400/E to facilitate handling of a variety of stores with hard spot support areas.

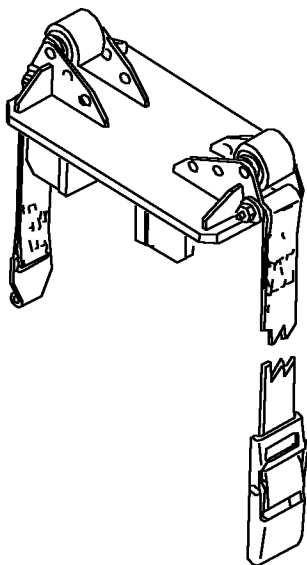
2-260. **ADU-400/E Weapon Skid Lift Loading Adapter.** The ADU-400/E weapon skid lift loading adapter (Figure 2-104) attaches to various weapon skids and has a scissors support structure that is raised by actuating either one of two hand hydraulic pumps. Various adapters can be attached to the support beam to handle the required weapons. The top area of the scissors contains small hydraulic cylinders for positioning movements of the support beam.

2-261. **ADU-405/E Height Adapter Roller.** The ADU-405/E height adapter roller (Figure 2-105) consists of four identical cast steel brackets, each containing two spring-loaded lock pins.

2-262. **ADU-406/E Trailer Adapter.** The ADU-406/E trailer adapter (Figure 2-106) is a rectangular steel weldment consisting of a support frame of two base channels and two rail channels supporting a movable frame. Roller bearings facilitate lateral movement of the movable frame and ball lock pins inserted into guide holes of the rail channels lock the movable frame in the desired position. Hold down clamps are fastened to each corner of the support frame with lengths of chain.

**PHYSICAL CHARACTERISTICS:**

Weight:	15 lb.
Dimensions:	
Length:	18 in.
Width:	5.5 in.
Height:	7 in.



**Figure 2-103. ADU-397/E Roller Cradle Adapter**

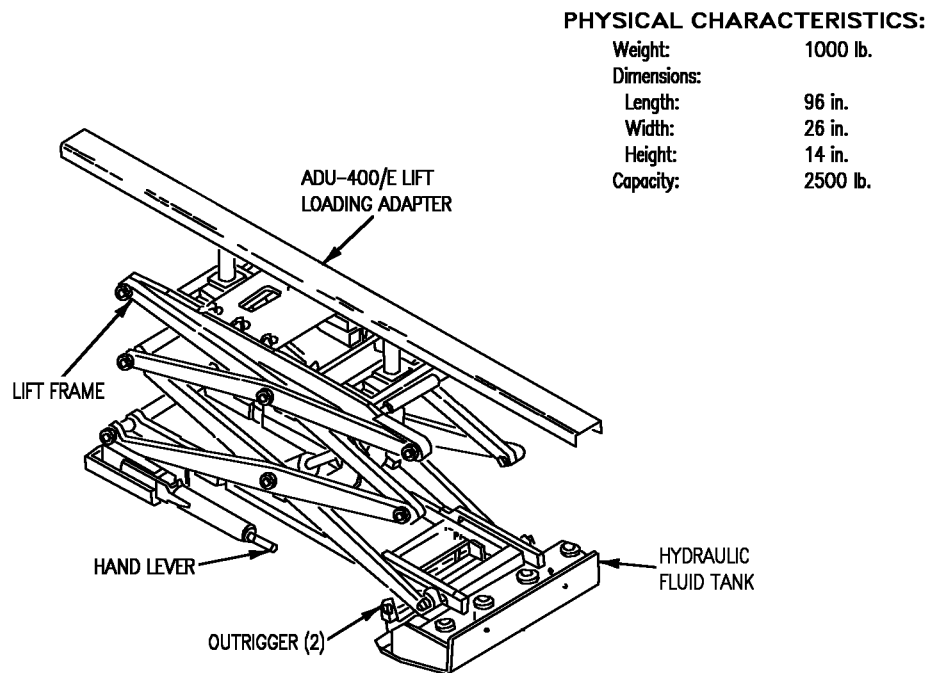


Figure 2-104. ADU-400/E Weapon Skid Lift Loading Adapter

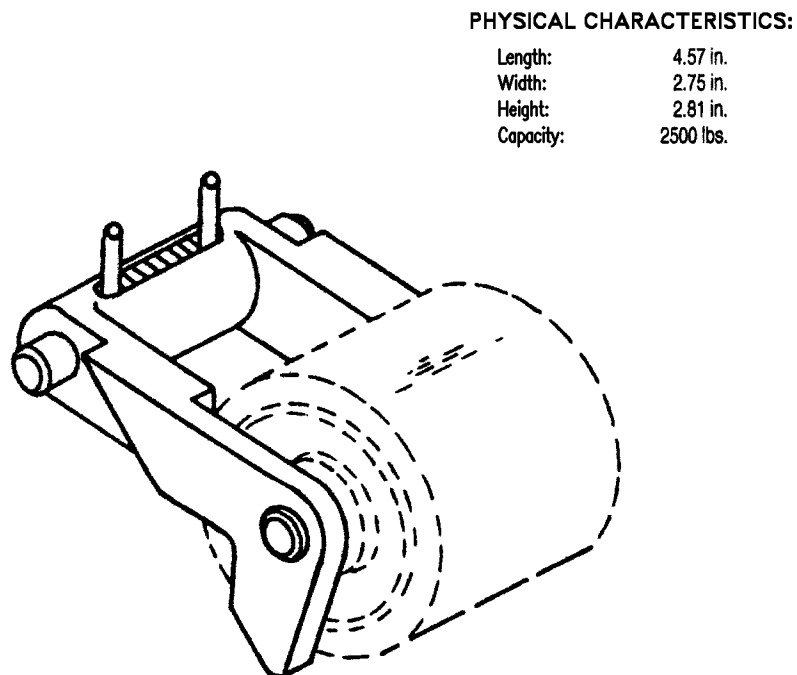
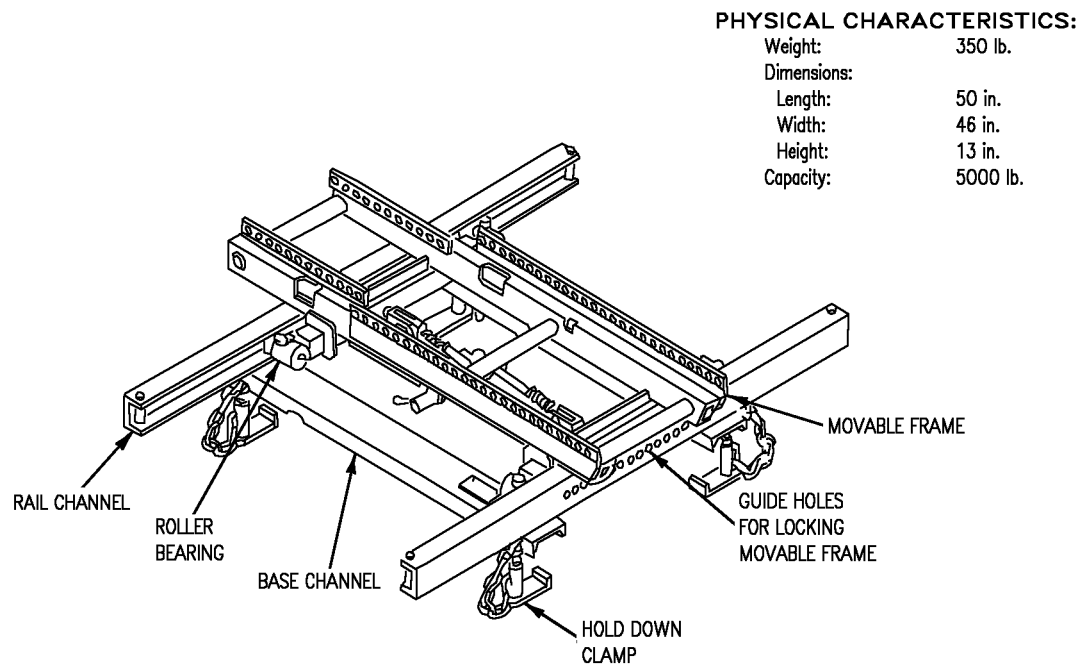


Figure 2-105. ADU-405/E Height Adapter Roller



**Figure 2-106. ADU-406/E Trailer Adapter**

**2-263. ADU-433A/E and ADU-434A/E Height Adapters.** The ADU-433A/E and ADU-434A/E height adapters (Figure 2-107) attach to various weapon skids. The ADU-433A/E and ADU-434A/E are used as an interface between various skids and adapters to provide added height.

**2-264. ADU-475/E Guided Missile Adapter.** The ADU-475/E guided missile adapter (Figure 2-108) consists of a steel frame of rectangular tubing and eight rubber-padded support saddles with tiedown straps. The frame has fore and aft end members separated by a two piece telescopic longitudinal member, which is adjustable in length. Once the desired length is adjusted, a quick-release pin inserted into appropriate guide holes secures the longitudinal member. The saddles are sufficiently rigid to provide fore and aft damping and afford some degree of shock mitigation. The saddles fold inward to a stowed position. The ADU-475/E guided missile adapter is used with various skids, transporters, and trailers for transporting AIM-9 series guided missiles.

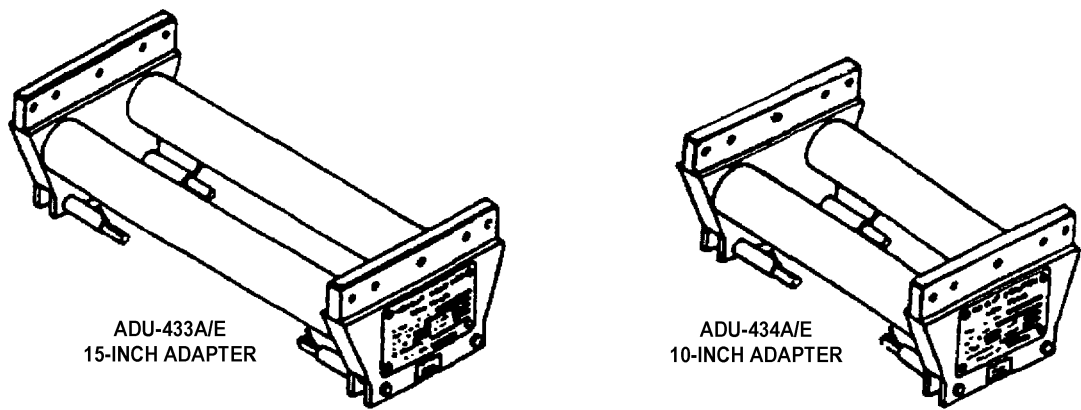
**2-265. ADU-483/E Skid Adapter Assembly.** The ADU-483/E skid adapter assembly (Figure 2-109) consists of one steel upper frame section with two removable rubber rollers and a nylon tiedown strap and buckle. A quick-release pin is provided for attaching and securing two adapter assemblies together at the top, forming a complete load bearing assembly capable of supporting two cylindrical weapons side by side. The position of the outboard roller is fixed. The inboard roller can be situated in either of two positions. The ADU-483/E skid adapter assembly is used in pairs with the Aero 58A skid adapter. When mounted on the top of two Aero 58A skid adapters (front and rear) and secured with quick release pins, ADU-483/E skid adapter assembly can support two weapons from 9 to 16 inches in diameter.

**2-266. ADU-488/E Wing-Fin-Fuze Adapter.** The ADU-488/E wing-fin-fuze adapter (Figure 2-110) is an aluminum box design. The adapter is used with associated weapon skids and can transport eight wings and fins

**A1-F18AE-LWS-000**  
**Description**

**PHYSICAL CHARACTERISTICS:**

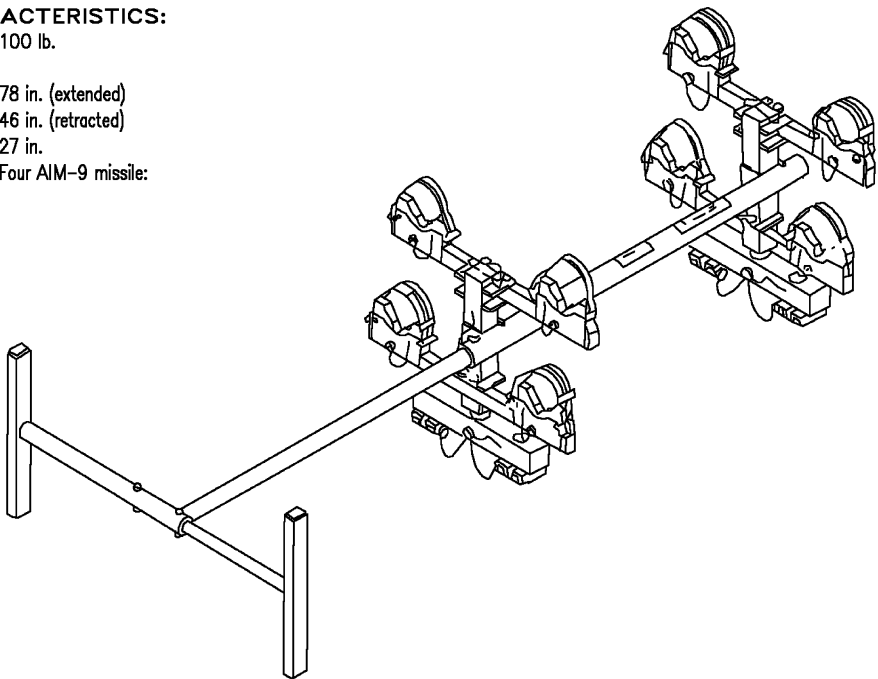
	ADU-433A/E	ADU-434A/E
Weight:	20.0 lb.	18.0 lb.
Dimensions:		
Length:	15.5 in.	11.5 in.
Width:	7.0 in.	7.0 in.
Height:	5.13 in.	5.13 in.
Capacity:	1800 lb.	1800 lb.



**Figure 2-107. ADU-433A/E and ADU-434A/E Height Adapters**

**PHYSICAL CHARACTERISTICS:**

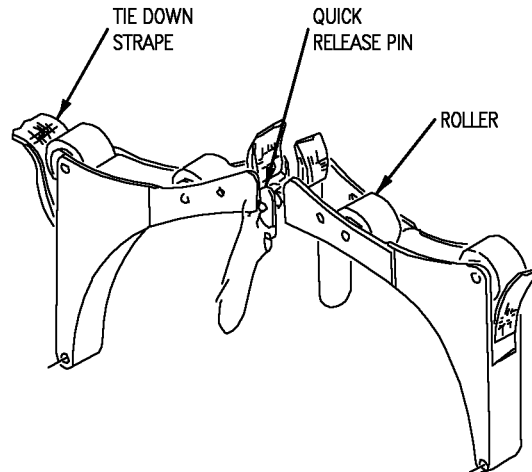
Weight:	100 lb.
Dimensions:	
Length:	78 in. (extended)
Width:	46 in. (retracted)
Height:	27 in.
Capacity:	Four AIM-9 missile:



**Figure 2-108. ADU-475/E Guided Missile Adapter**

**PHYSICAL CHARACTERISTICS:**

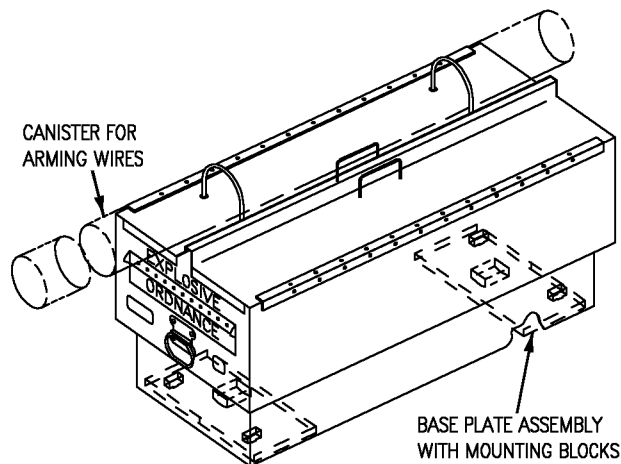
Weight:	11 lb.
Dimensions:	
Length:	25.2 in.
Width:	2.7 in.
Height:	12.7 in.
Capacity:	4000 lb. per set



**Figure 2-109. ADU-483/E Skid Adapter Assembly**

**PHYSICAL CHARACTERISTICS:**

Weight:	110 lb.
Dimensions:	
Length:	46 in.
Width:	20 in.
Height:	20.5 in.



**Figure 2-110. ADU-488/E Wing-Fin-Fuze Adapter**

**Description**

for the Shrike or Harpoon missile or 48 M904 series or other applicable bomb fuzes. A 5-inch canister is attached to the side of the ADU-488/E for stowage and transporting arming wires.

2-267. **ADU-496 Single Stores Adapter.** The ADU-496 single stores adapter (Figure 2-111) (used in sets of four) is designed to support weapons/stores having a 10-inch diameter or larger during handling and transporting.

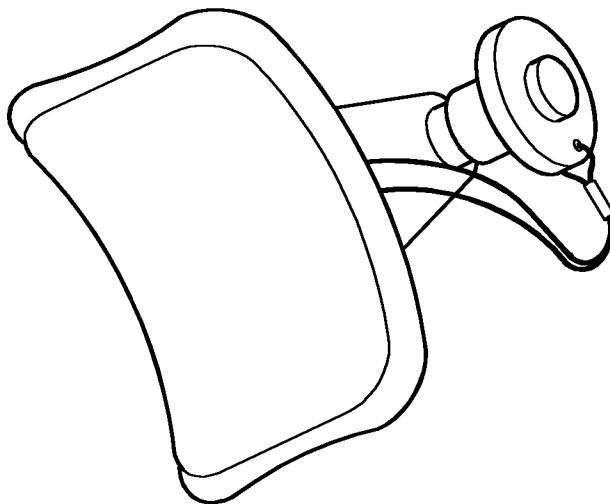
2-268. **ADU-498/E Trolley Adapter, Wide Band (Short).** The ADU-498/E trolley adapter (Figure 2-112) is a steel weldment consisting of a preformed steel band, two base plates, and two quick release pins. The adapter is used with hoist adapters to load the ALQ-167 pod.

2-269. **ADU-511 Series Adjustable Weapon Adapter.** The ADU-511 series adjustable weapon adapter (Figure 2-113) allows attachment of four support chock assemblies with bonded rubber pads and quick release pins. Belt retractor assemblies (one on each end of the weapon adapter) allow the tiedown belts to be drawn over a weapon/store and fastened at any of three appropriate tiedown bars that are pinned to the adapter. Two quick release pins allow the ADU-511 series adjustable weapon adapter (used in pairs) to be attached to the upper outboard holes of the Aero 58A front and rear skid adapters.

2-270. **ADU-628/E Transport Adapter Insert.** The ADU-628/E transport adapter insert (Figure 2-114) is a foam liner containing cutouts for two sets of AIM-120 wings, fins, and buffer connectors. The insert is sized to allow two inserts to fit within the confines of the ADU-488/E wing, fin, and fuze adapter without modification. The inserts include handles to allow easy removal with or without the wings, fins, or buffer connectors installed.

**PHYSICAL CHARACTERISTICS:**

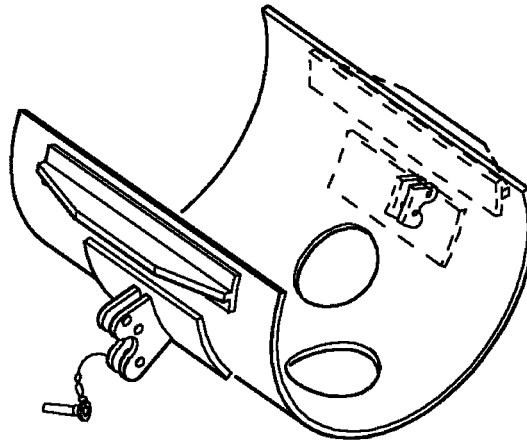
<b>Weight:</b>	3 lb.
<b>Dimensions:</b>	
Length:	5.3 in.
Width:	4.6 in.
Height:	3.1 in.
<b>Capacity:</b>	500 lb. each



**Figure 2-111. ADU-496 Single Stores Adapter**

**PHYSICAL CHARACTERISTICS:**

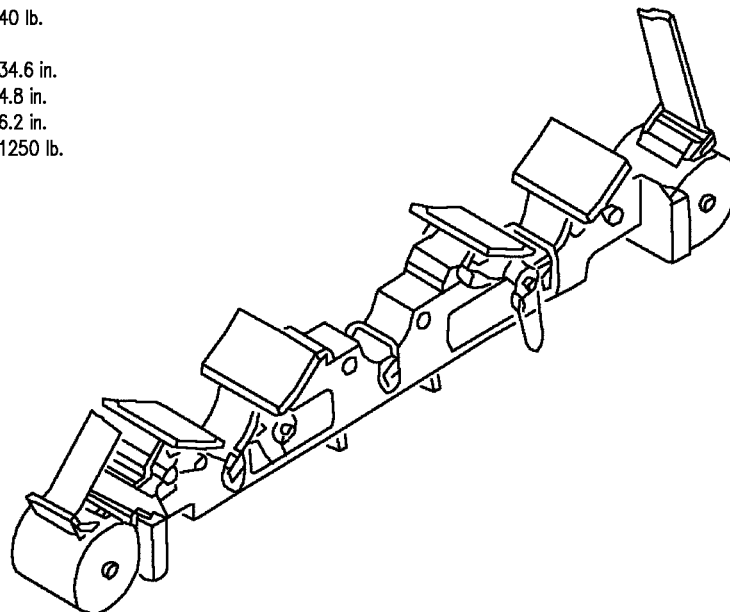
Weight: 12 lb.  
Dimensions:  
Length: 20 in.  
Width: 10 in.  
Capacity: 540 lb.



**Figure 2-112. ADU-498/E Trolley Adapter**

**PHYSICAL CHARACTERISTICS:**

Weight: 40 lb.  
Dimensions:  
Length: 34.6 in.  
Width: 4.8 in.  
Height: 6.2 in.  
Capacity: 1250 lb.



**Figure 2-113. ADU-511 Series Adjustable Weapon Adapter**

## Description

## PHYSICAL CHARACTERISTICS:

Weight:	10 lb.
Dimensions:	
Length:	44.5 in.
Width:	19.8 in.
Height:	12 in.

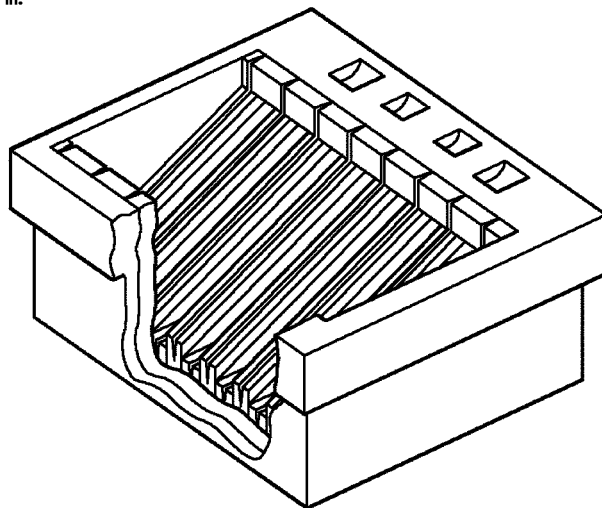


Figure 2-114. ADU-628/E Transport Adapter Insert

2-271. **ADU-514 Series Small Missile Adapter.** The ADU-514 series small missile adapters (Figure 2-115) are steel weldments with gel filled chocks, designed to transport missiles from 5 to 10 inches in diameter. Both tiers of the ADU-514/E are fixed in height. Both upper tiers of the ADU-514A/E are adjustable in height to accommodate AIM-9 missiles. The upper tier of each adapter can be rotated 90 degrees to allow loading and unloading of the lower missile chocks.

2-272. **ADU-783/E Missile Trolley Adapters.** The ADU-783/E Missile Trolley adapter (Figure 2-116) is used to hoist load the AGM-154 (JSOW) missile to the aircraft parent rack. The trolley consists of a stainless steel housing and a pulley fastened with a bolt and lock nut. The trolley adapters slip under specially designed cavities under the AGM-154 wing cover. Two adapters are required for each loading/unloading evolution. The trolley adapters are held in place by the bomb hoist cable. The trolley adapter pulleys accommodate a 0.25-inch-diameter cable.

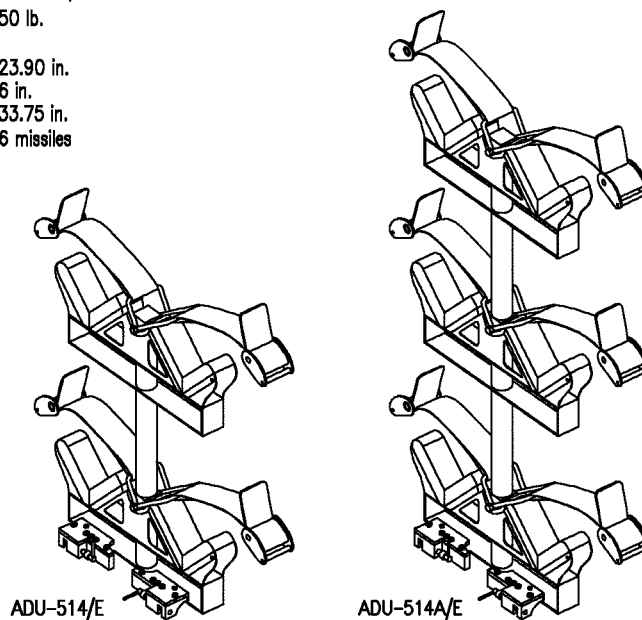
2-273. **ADU-800/E and ADU-814/E Transport Adapters.** The ADU-800/E and ADU-814/E Transport Adapters (Figure 2-117) are used for transporting the TALD/ITALD to AERO 58A adapters. The ADU-800/E and ADU-814/E adapters are made of black vinyl and incorporate spring pins for securing to AERO 58A or ADU-483/E adapters. The ADU-800/E adapter is contoured to support the front of the ITALD, and the ADU-814/E is designed to support the aft end of the ITALD when configured on AERO 58A or ADU-483/E adapters. The ADU-800/E adapter can also be used, in pairs, to transport TALD.

2-274. **ADU-801/E Transport Adapter.** The ADU-801/E Transport Adapter (Figure 2-118) is a hinged aluminum adapter with a rubber surfaced support pad. The ADU-801/E adapter is designed to interface with the AERO 58A adapters for transporting the AGM-84H (SLAM ER) missile. The ADU-801/E upper assembly, with



**PHYSICAL CHARACTERISTICS:**

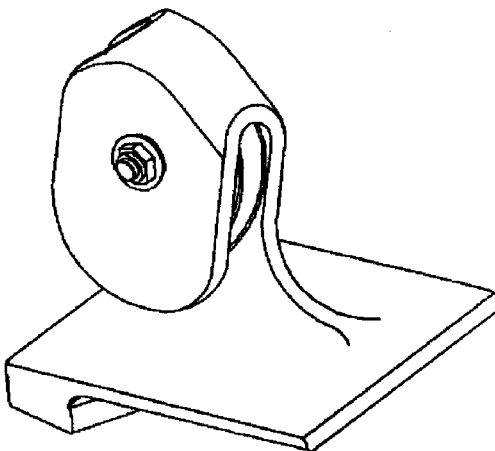
	ADU-514/E	ADU-514A/E
Weight:	30 lb.	50 lb.
Dimensions:		
Length:	23.88 in.	23.90 in.
Width:	6 in.	6 in.
Height:	24.25 in.	33.75 in.
Capacity:	4 missiles	6 missiles



**Figure 2-115. ADU-514 Series Small Missile Adapters**

**PHYSICAL CHARACTERISTICS:**

Weight:	3.0 lb.
Dimensions:	
Length:	4.4 in.
Width:	3.5 in.
Height:	4.8 in.

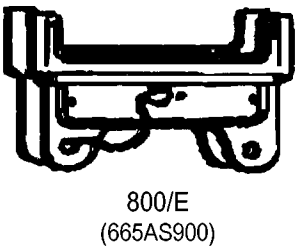
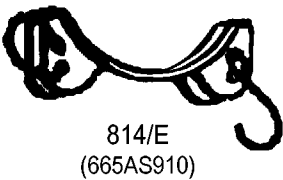


**Figure 2-116. ADU-783/E Missile Trolley Adapter**

**A1-F18AE-LWS-000**  
**Description**

PHYSICAL CHARACTERISTICS:

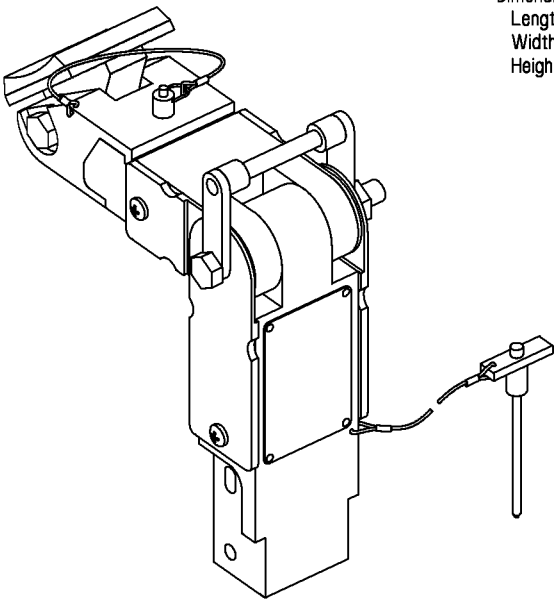
	ADU-800/E	ADU-814/E
Weight:	6 lb.	3 lb.
Dimensions:		
Length:	13.25 in.	11.0 in.
Width:	3.0 in.	3.0 in.
Height:	8.5 in.	4.375 in.



**Figure 2-117. ADU-800/E and ADU-814/E Transport Adapter**

PHYSICAL CHARACTERISTICS:

Weight:	10 lb.
Dimensions:	
Length:	11.00 in.
Width:	5.00 in.
Height:	11.00 in.



**Figure 2-118. ADU-801/E Transport Adapter (3516AS100-1)**

support pad, will rotate to prevent damage to the AGM-84H wings when the weapon is hoisted. Four adapters are required to support the AGM-84H weapon.

**2-275. AIM-7 Missile Loading Adapter (74D750017-1003).** The AIM-7 missile loading adapter (74D750017-1003) (Figure 2-119) is an aluminum support assembly with four rollers and a polyurethane padded cradle. Two forklift pockets accommodate the tines of the A/S32K-1D Weapons Loader. The adapter is secured to the loader with two quick-release pins. A plate has been added to the adapter to increase side-to-side (YAW) motion capability.

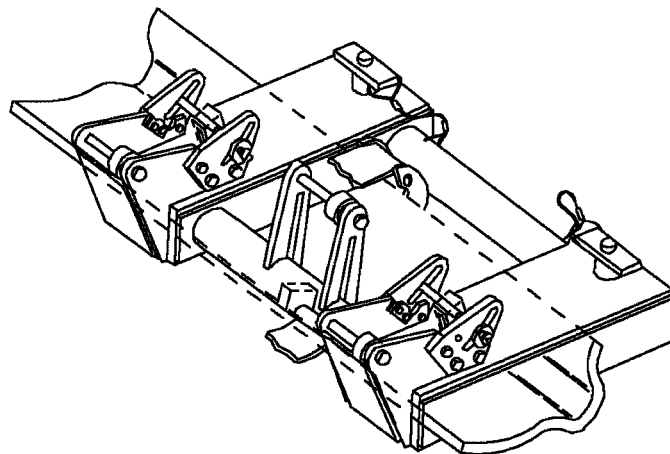
**2-276. External Fuel Tank Adapter (74D750018).** The external fuel tank adapter (74D750018) (Figure 2-120) is used to transport and load FPU-6/A external fuel tanks. The adapter contains rubber-faced steel supports welded to a structural frame composed of two forklift receptacles and two channels with beaded lower flanges for mounting clamps provided on the bed of a trailer. Spacing of the rails is approximately 27 inches to permit carrying two loaded adapter assemblies abreast. Forklift receptacles are mounted through the rails to provide the structural base for cradle supports containing bearing pads, which prevent slippage and reduce damage to the tank exterior fiberglass covering during transportation or loading.

**2-277. Round External Fuel Tank Adapter (74D750042).** The round external fuel tank adapter (74D750042) (Figure 2-121) is used to transport the FPU-8/A external fuel tank with various weapon skids/trailers. The adapter consists of two identical assemblies that are mounted on the skid/trailer.

**2-278. MHU-61/E Sidewinder Cradle.** The MHU-61/E Sidewinder cradle (Figure 2-122) consists of a lower rectangular frame equipped with two vertical and two upper supports. The frame has forklift pockets. The

**PHYSICAL CHARACTERISTICS:**

Weight:	45 lb.
Dimensions:	
Length:	20 in.
Width:	26 in.
Height:	12 in.

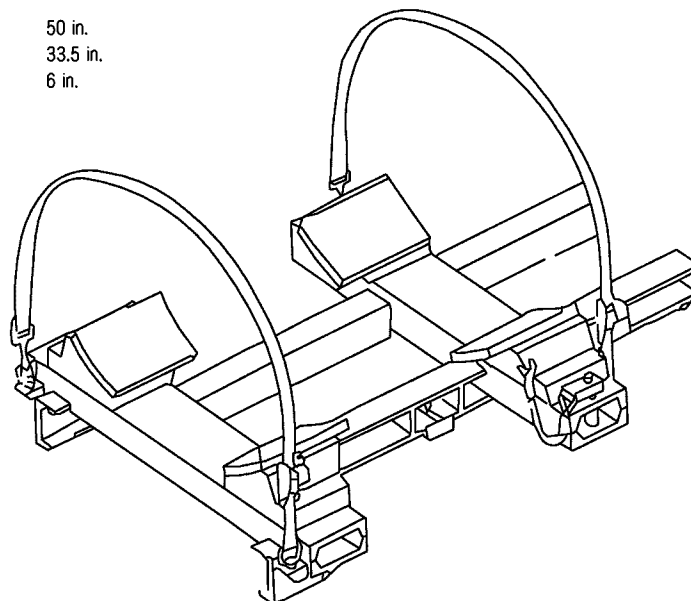


**Figure 2-119. AIM-7 Missile Loading Adapter (74D750017)**

**Description**

**PHYSICAL CHARACTERISTICS:**

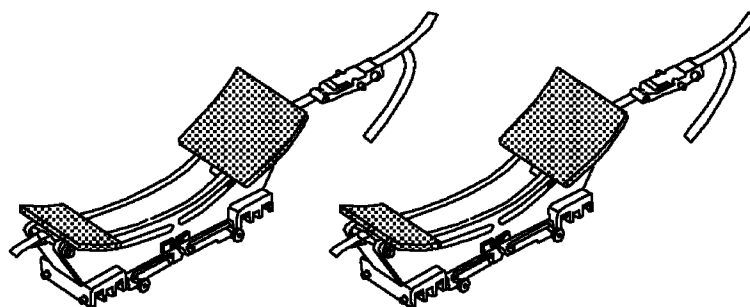
Weight: 40 lb.  
Dimensions:  
Length: 50 in.  
Width: 33.5 in.  
Height: 6 in.



**Figure 2-120. External Fuel Tank Adapter (74D750018)**

**PHYSICAL CHARACTERISTICS:**

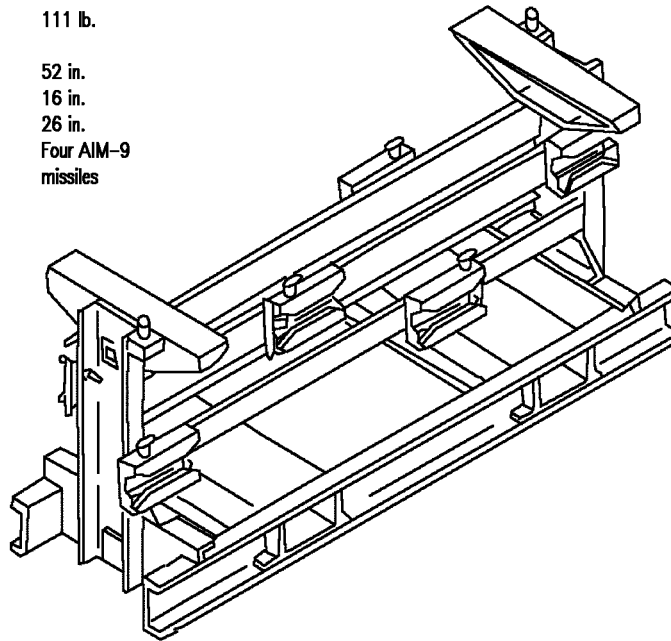
Weight: 25 lb. (each)  
Dimensions:  
Length: 5 in.  
Width: 19 in.  
Height: 6 in.



**Figure 2-121. Round External Fuel Tank Adapter (74D750042)**

**PHYSICAL CHARACTERISTICS:**

Weight:	111 lb.
Dimensions:	
Length:	52 in.
Width:	16 in.
Height:	26 in.
Capacity:	Four AIM-9 missiles



**Figure 2-122. MHU-61/E Sidewinder Cradle**

vertical supports are fitted with brackets for securing two missiles to each side of the cradle. The upper supports have alignment pins and latches at each end for stacking the loaded cradles.

**2-279. MHU-63/E Small Universal Cradle.** The MHU-63/E small universal cradle (Figure 2-123) consists of two metal support rails bolted to two forklift pockets and two end support braces. The end support braces are equipped with support assemblies, each of which consists of two sets of hinged vertical arms, two rollers, and a wedge-type brake. The MHU-63/E small universal cradle is used for storing and transporting weapons that range from 8 to 16 inches in diameter. The support assemblies adjust automatically for weapons within this range of diameters. A small universal stacking frame (MHU-64/E) can be used to stack these cradles for storage. The forklift pockets allow the transporting of a loaded cradle.

**2-280. MHU-65/E Large Universal Cradle.** The MHU-65/E large universal cradle (Figure 2-124) consists of two metal support rails bolted to two forklift pockets and two end support braces. The end support braces are equipped with support assemblies, each of which consists of two sets of hinged vertical arms, two rollers, a flexible belt, and a wedge-type brake. The MHU-65/E large universal cradle is used for storing and transporting weapons that range in diameter from 16 to 32 inches. The support assemblies automatically adjust to weapons within this range of diameters. The support assemblies lock with a wedge type brake. The forklift pockets allow the transporting of a loaded cradle.

**2-281. MHU-125 Skid Platform.** The MHU-125 skid platform (Figure 2-125) consists of two metal support rails, a rail adapter weldment located inside the rails bolted to two forklift pockets, and two end support braces. The MHU-125 is used for storing and transporting weapons that range in diameter from 16 to 32 inches. The forklift pockets allow the transporting of a loaded cradle.

## Description

### PHYSICAL CHARACTERISTICS:

Weight: 98 lb.  
Dimensions:  
Length: 61.5 in.  
Width: 12.25 in.  
Height: 9 in.  
Capacity: 3000 lb.

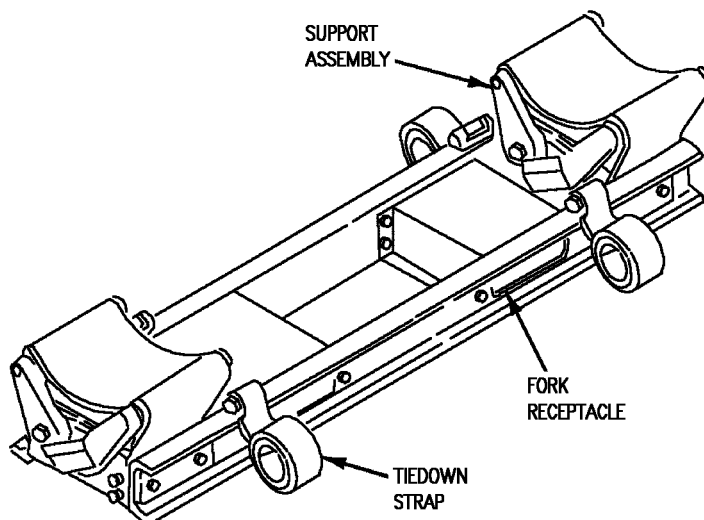


Figure 2-123. MHU-63/E Small Universal Cradle

### PHYSICAL CHARACTERISTICS:

Weight: 125 lb.  
Dimensions:  
Length: 61.5 in.  
Width: 21.13 in.  
Height: 11 in.  
Capacity: 3000 lb.

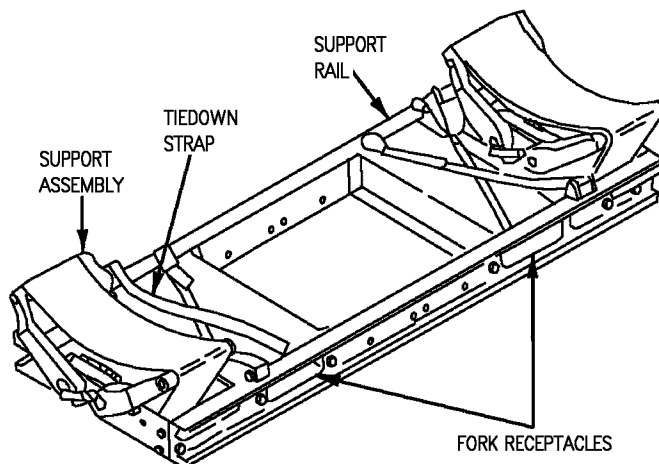
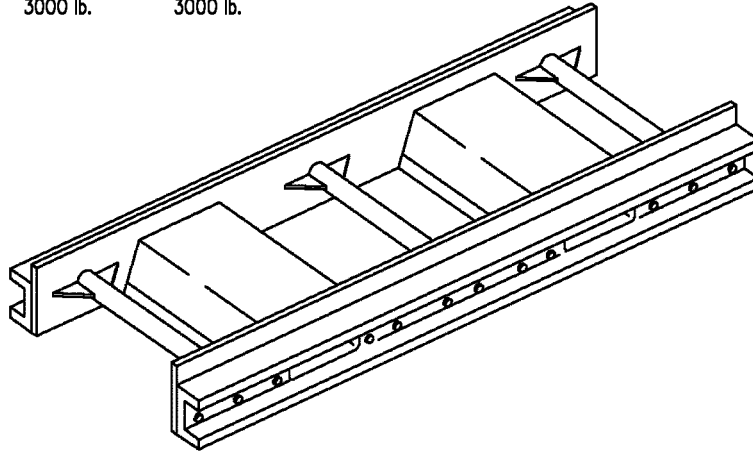


Figure 2-124. MHU-65/E Large Universal Cradle

**PHYSICAL CHARACTERISTICS:**

	MHU-125/E	MHU-125A/E
Weight:	130 lb.	60 lb.
Dimensions:		
Length:	57 in.	64 in.
Width:	20 in.	20 in.
Height:	6.25 in.	6.25 in.
Capacity:	3000 lb.	3000 lb.



**Figure 2-125. MHU-125 Skid Platform**

2-282. **VER Support Cradle (74D750009).** The VER support cradle (74D750009) (Figure 2-126) is used to support preloaded launchers and VERs for transporting and loading/unloading. It is used in conjunction with the adapter transporter (74D750008) on various weapon skids/trailers. The cradle support is a steel weldment containing four pairs of rollers on arms that form two cradles attached to torque box assemblies that are joined together by a pair of tube extrusions. The cradles are manually preset into the proper positions for supporting either two missiles or a preloaded VER.

2-283. **Canted VER Adapter Set.** The canted VER adapter set (74D750081) (Figure 2-127) is used in conjunction with the VER support cradle (75D750009). Together they are used to support preloaded canted VERs during transport loading/unloading.

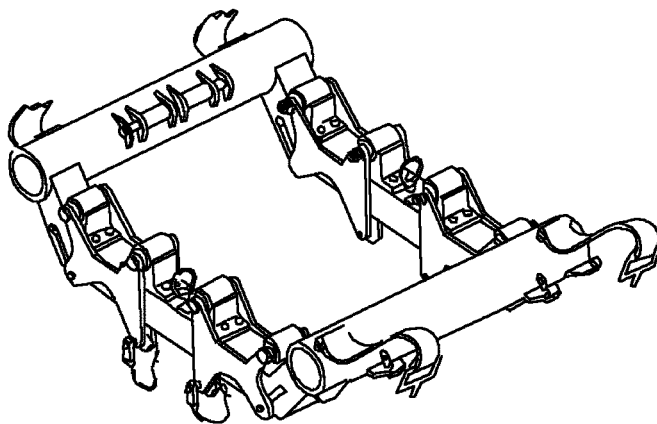
2-284. **Roller Adapter.** The roller adapter (Figure 2-128) consists of cast steel brackets containing a rubber roller. The adapters can be placed in the various holes of the A/S32K-1 weapon loader forks.

2-285. **A/S32K-1 Weapon Loader.** The A/S32K-1 weapon loader (Figure 2-129) is a self-propelled vehicle with a low, heavy-duty frame supported by six small, high-capacity wheels. The vehicle consists of two main functional components. The lifting mechanism consists of a lift boom, hydraulic system, and manipulating head. The lift boom is operated by a piston-type hydraulic cylinder mounted in the midsection of the boom support. The manipulating head is located at the upper end of the lift boom and is capable of limited lateral and longitudinal motions as well as tilting and yawing. The head is equipped with lifting forks, which are attached with quick-release pins and can be mounted in three positions: normal, inverted forward, and inverted rear.

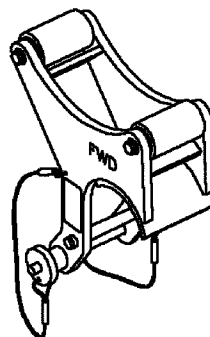
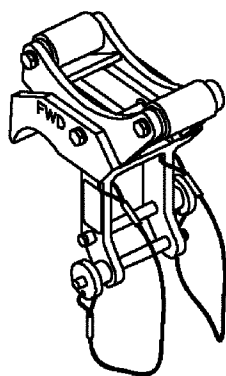
**A1-F18AE-LWS-000**  
**Description**

**PHYSICAL CHARACTERISTICS:**

Weight: 65 lb.  
Dimensions:  
Length: 24 in.  
Width: 32 in.  
Height: 9 in.



**Figure 2-126. VER Support Cradle (74D750009)**



**PHYSICAL CHARACTERISTICS:**

Weight: 5 lb.  
Dimensions:  
Length: 8 in.  
Width: 4 in.  
Height: 9 in.

**Figure 2-127. Canted VER Adapter Set**



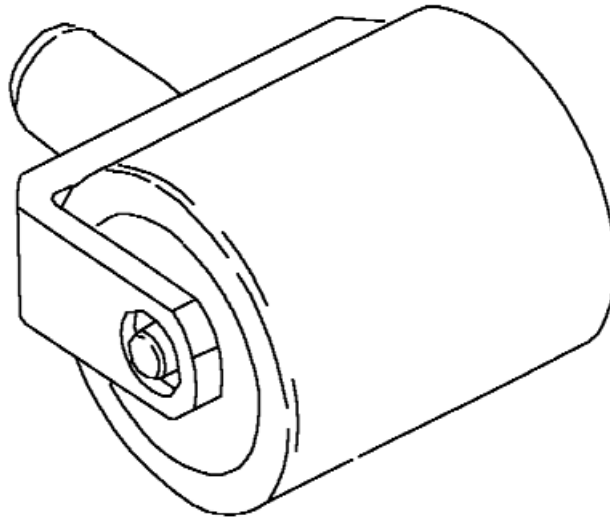


Figure 2-128. Roller Adapter

**PHYSICAL CHARACTERISTICS:**

Weight: 5775 – 6050 lb.  
Dimensions:  
Length: 200.5 – 204.5 in.  
Width: 63 – 135 in.  
Height: 40.75 in.  
Capacity: 4500 lb.

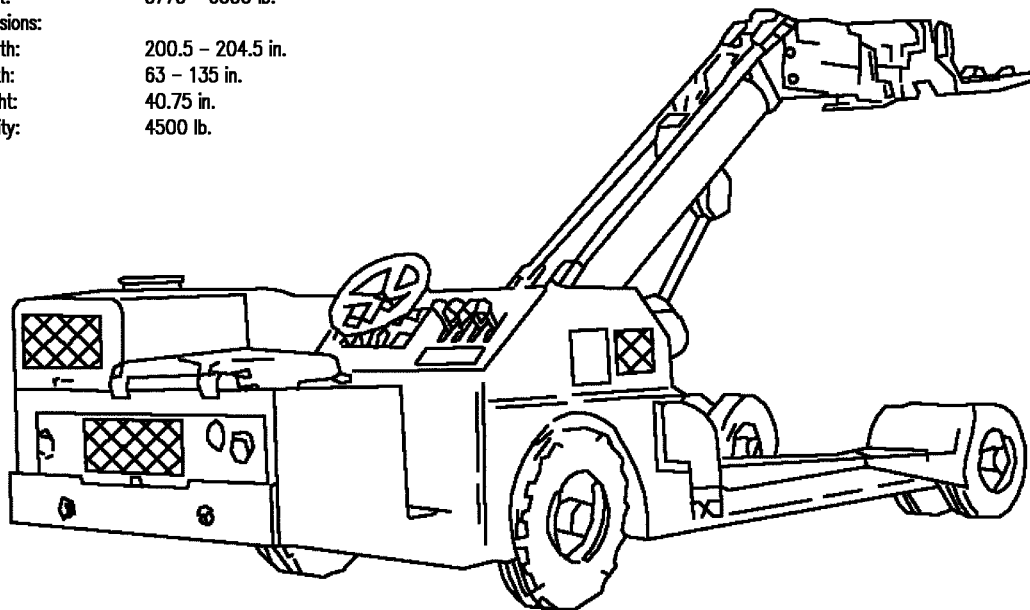


Figure 2-129. A/S32K-1 Weapon Loader

## A1-F18AE-LWS-000

### Description

2-286. **MHU-188/E Fork Extensions.** The MHU-188/E fork extensions (Figure 2-130) are designed to extend the forks of the A/S32K-1 weapons loader.

2-287. **CNU-399/E Shipping and Storage Container.** The CNU-399/E shipping and storage container (Figure 2-131) is a reusable container used to store and transport the AGM-65 series missile.

2-288. **Multimeter.** The multimeter (Figure 2-132 and Figure 2-133) is a portable, multi-range, AC-DC, volt-ohm multimeter used for general electronic and electrical service.

2-289. **TS-3519D/DSM Test Set Simulator.** The TS-3519D/DSM test set (Figure 2-134) is a manually programmable digital test set used to functionally check the AGM-84 system prior to loading.

2-290. **AN/ALM-225 and AN/ALM-291 Countermeasure Dispenser Test Set.** The AN/ALM-225 and AN/ALM-291 test set (Figure 2-135) is a portable test set used at the organizational maintenance level for preflight testing of the AN/ALE-39 Countermeasures Dispenser System. The AN/ALM-291 is an AN/ALE-225 modified in accordance with Support Equipment Change (SEC) No. 5602 and can only be used in aircraft that have been modified in accordance with AN/ALE-39 Avionics Change (AVC) No. 5149.

2-291. **Stray Voltage/Flight Line Payload Simulator (SV/FLPS).** The SV/FLPS (Figure 2-136) is a portable load simulator used to count fire pulses and test for stray voltage in the ALE-47 CMDS. A minimum of two simulators (AN/ALM-286) is required for system testing.

#### PHYSICAL CHARACTERISTICS:

Weight:	80 lb. (each)
Dimensions:	
Length:	46 in.
Width:	5 in.
Capacity:	1000 lb. (each)

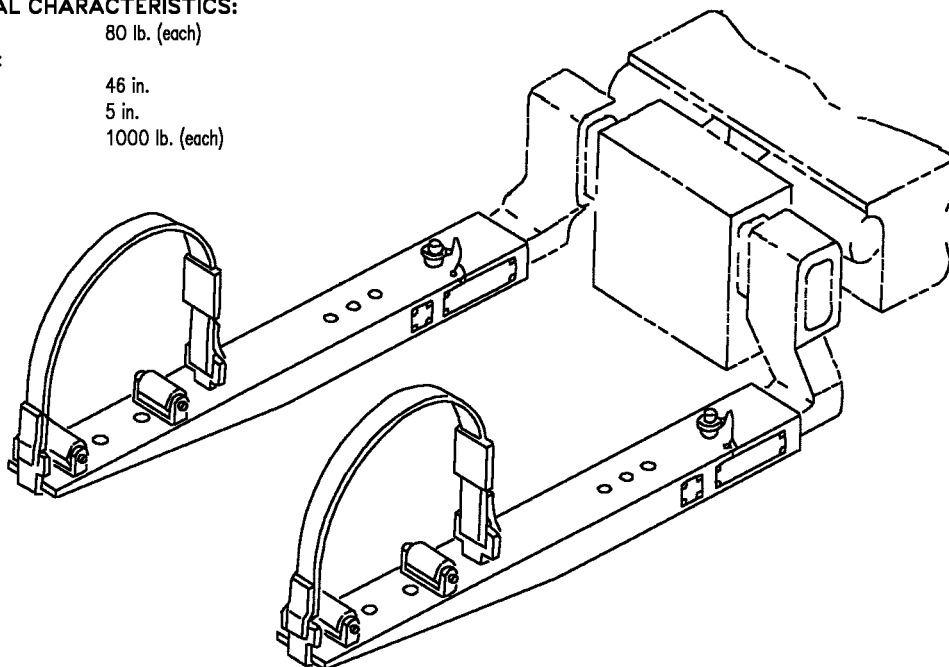


Figure 2-130. MHU-188/E Fork Extensions

**PHYSICAL  
CHARACTERISTICS:**

**Weight:**

Empty: 350 lb.

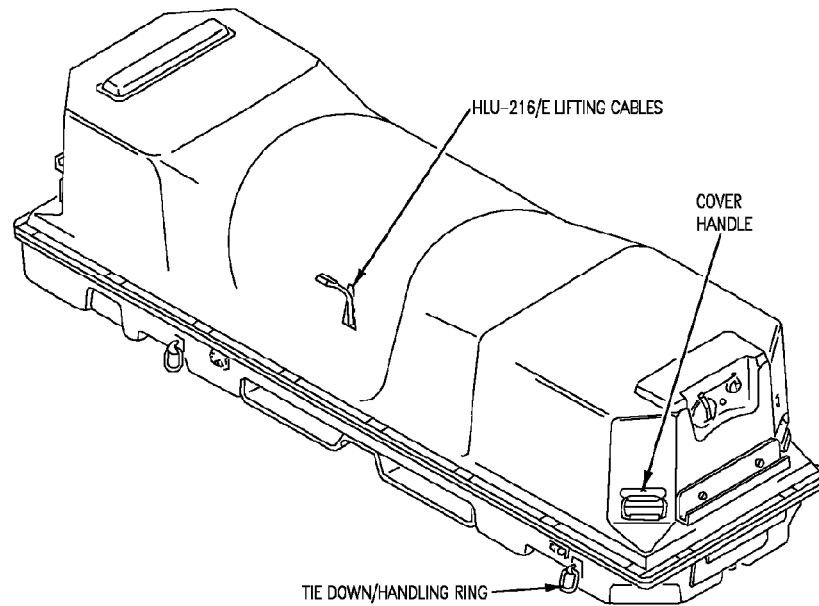
Loaded: 1006 lb.

**Dimensions:**

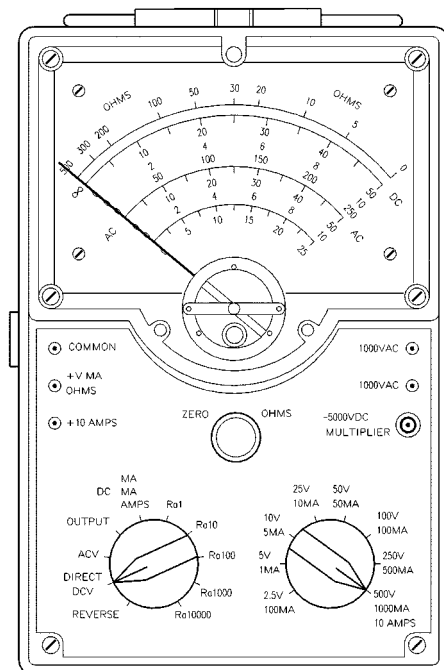
Length: 110 in.

Width: 32 in.

Height: 29.6 in.

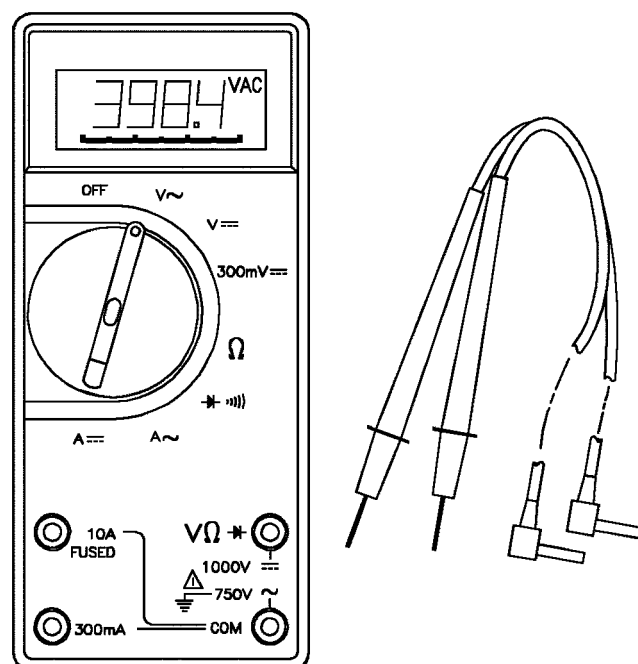


**Figure 2-131. CNU-399/E Shipping and Storage Container**

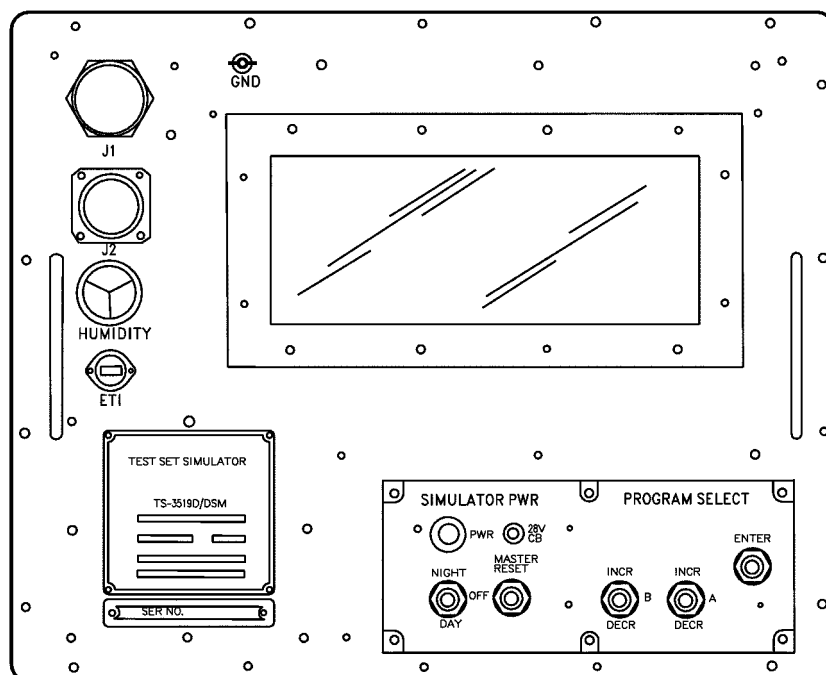


**Figure 2-132. Multimeter**

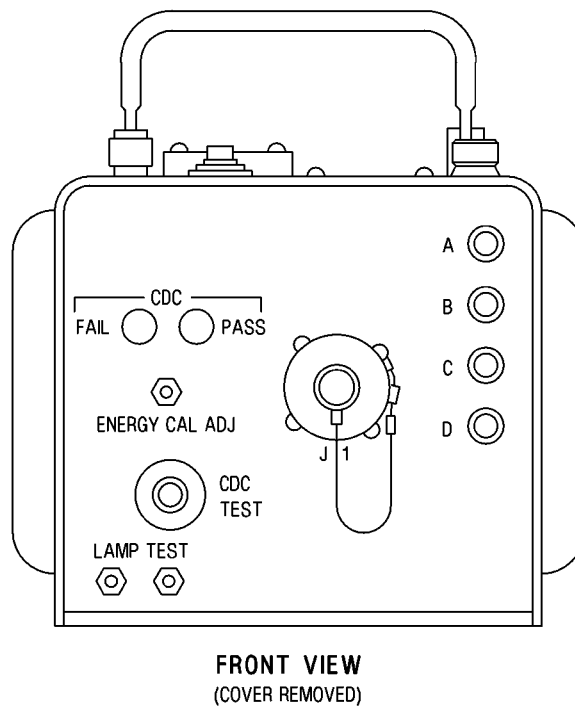
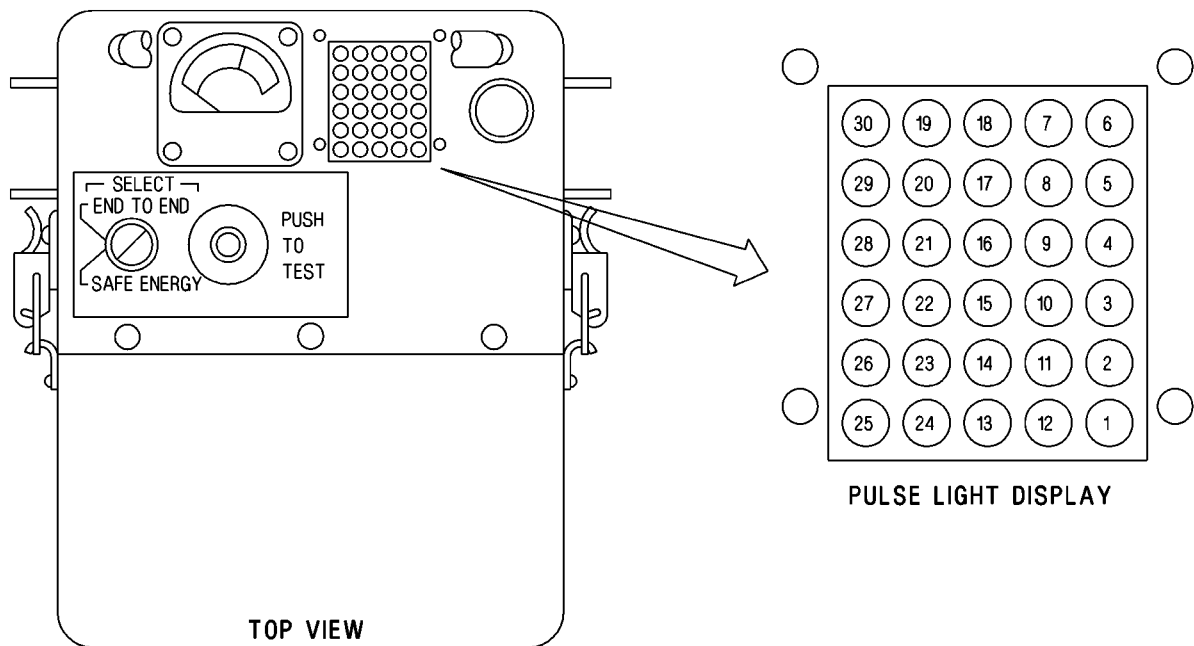
**A1-F18AE-LWS-000**  
**Description**



**Figure 2-133. 77B/N Digital Multimeter**

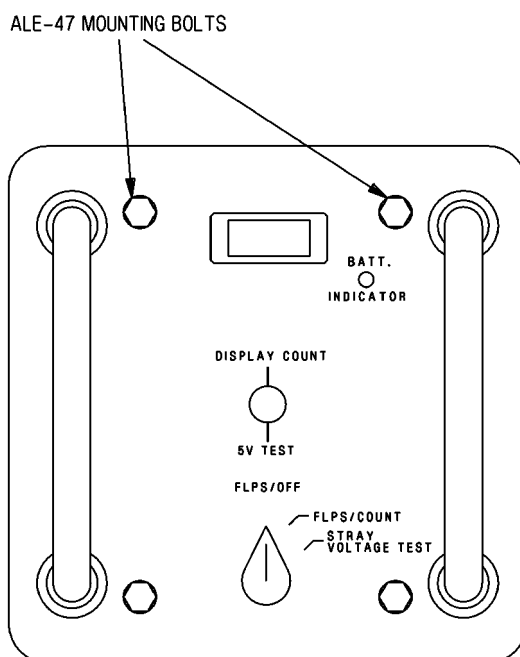


**Figure 2-134. TS-3519D/DSM Test Set Simulator**



**Figure 2-135. AN/ALM-225 and AN/ALM-291 Countermeasure Test Set**

## Description



**Figure 2-136. Stray Voltage/Flight Line Simulator (SV/FLPS)**

**2-292. AN/AWM-42A Fuze Function Control Test Set.** The AN/AWM-42A fuze function control test set (Figure 2-137) checks the DC fuzing capabilities of the various fuze function control sets. The test set contains its own power source and provides for continuity resistance and voltage checks of the electrical fuzing system.

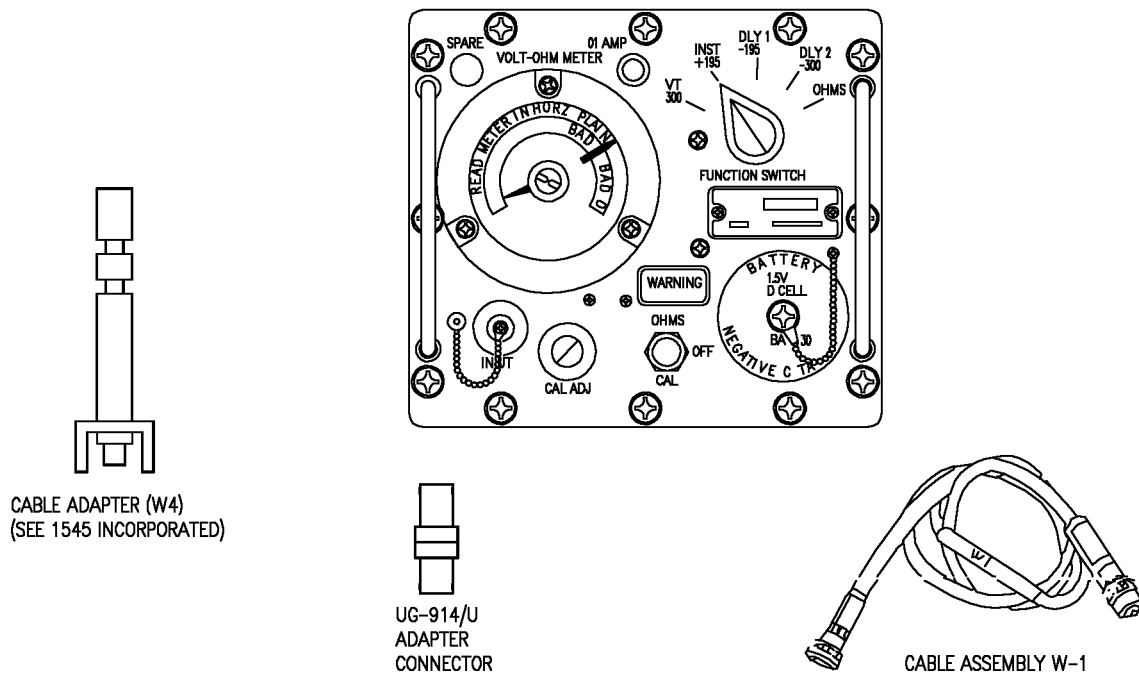
**2-293. AN/AWM-54 Aircraft Firing Circuit Test Set.** The AN/AWM-54 aircraft firing circuit test set (Figure 2-138) provides a GO/NO GO check of the weapons release system. The test set has three modes of operation. The stray voltage (S/V) mode checks the weapons system for unsafe stray voltages. The fire circuit (F/C) mode checks the weapons system for adequate voltage amplitude and current capacity. The self-test mode determines that the test set and appropriate adapter are satisfactory for use.

**2-294. AN/AWM-92 Aircraft Weapon Control Test Set.** The AN/AWM-92 aircraft weapon control test set (Figure 2-139) is used to perform operational checks of various missile launch and control systems.

**2-295. AN/AWM-96 Aircraft Weapon Control Test Set.** The AN/AWM-96 test set (Figure 2-140) is used to test all systems that use MIL-STD-1760 aircraft/store electrical interconnections.

**2-296. A/E-24T-230 Test Set.** The A/E-24T-230 test set (Figure 2-141) is designed to test for functional, firing, and stray voltage to the 20mm gun system.

**2-297. AN/AWM-100 Test Set.** The AN/AWM-100 test set (Figure 2-142) verifies AIM-9 missile system integrity to the missile/launcher interface and launcher power supply operation. The test set is operated and controlled by a software test program installed in the aircraft computer system.



**Figure 2-137. AN/AWM-42A Fuze Function Control Test Set**

**2-298. AN/AWM-102 Firing Circuit Test Set.** The AN/AWM-102 Firing Circuit Test Set (Figure 2-143) is a solid state electronic test set that is used for flight line testing of the aircraft's bomb release and missile firing circuits, and for checking stray voltages prior to arming. The test set provides a GO/NO GO indication for the circuit being tested. The AN/AWM-102 test set is a replacement for the AN/AWM-54 Aircraft Firing Circuit Test Set and uses test set adapters provided for the AN/AWM-54 test set.

**2-299. A/E-24T-216 Test Set.** The A/E-24T-216 test set (Figure 2-144) verifies AIM-7 missile system integrity to the missile/launcher interface. The test set is operated and controlled by a software test program installed in the aircraft computer system.

**2-300. Proximity Switch Control (74D420030-1001).** The proximity switch control (Figure 2-145) is used to simulate weight off wheels and gear up and locked. It is used when checking aircraft armament systems.

**2-301. TTU-304/E Guided Missile Tester.** The TTU-304/E guided missile tester (Figure 2-146) is used as an IR source when performing AIM-9 Sidewinder missile tone checks.

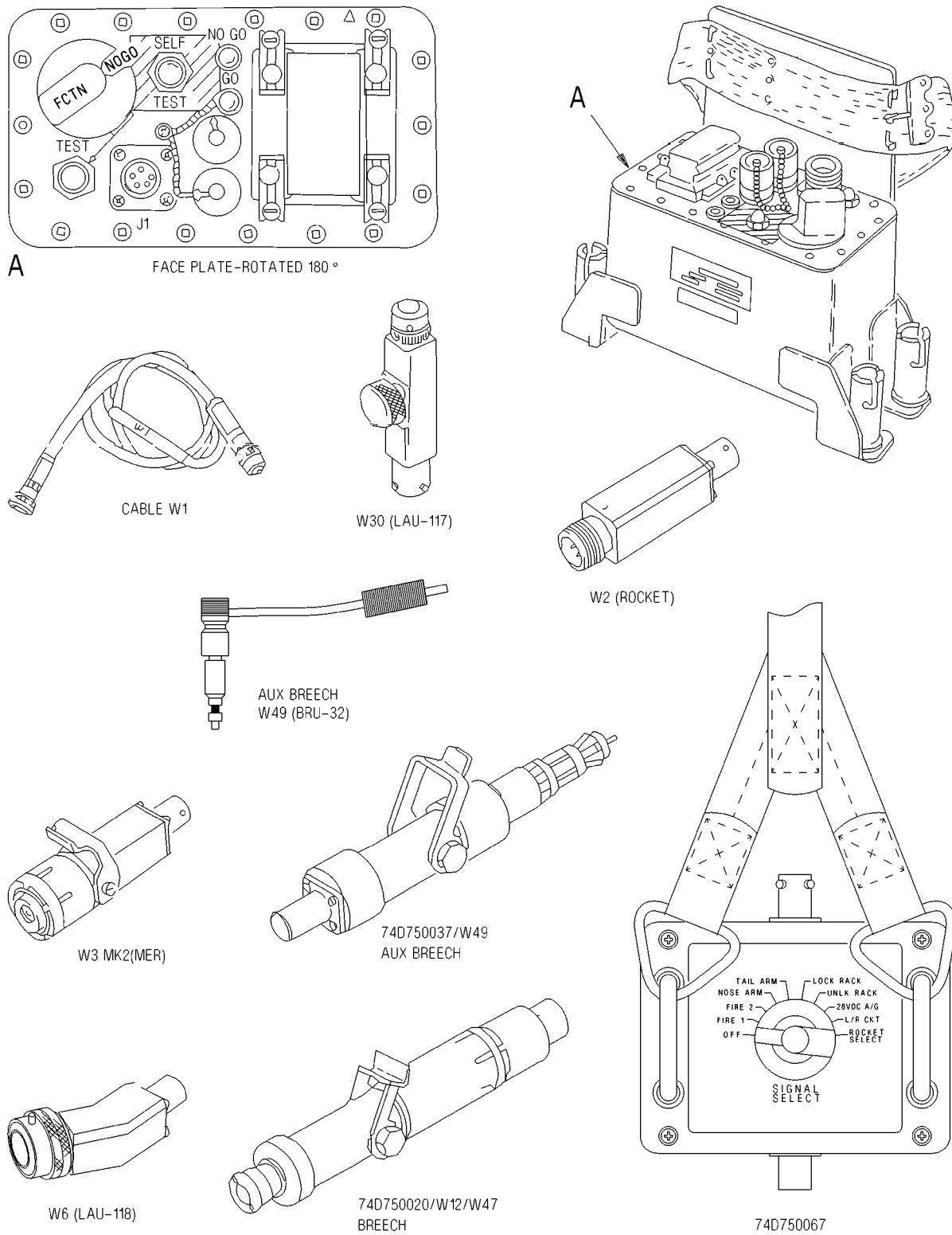
**2-302. TTU-504/E Launcher Adapter Test Plug Assembly.** The TTU-504/E launcher adapter test plug assembly (Figure 2-147) is attached to the adapter cable umbilical to complete the TALD/ITALD circuit through the umbilical cable when performing release and control system check prior to loading TALD/ITALD.

**2-303. GMU-24A/A Flow Indicator.** The GMU-24A/A flow indicator (Figure 2-148) measures the amount of nitrogen flowing to the missile.

**2-304. 9707 Mk 2 Pressure Gauge.** The 9707 Mk 2 pressure gauge (Figure 2-149) is used with the LAU-7C/A HiPPAG launcher to verify coolant system high pressure.

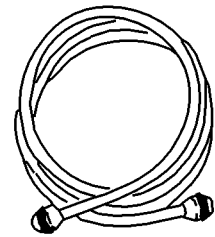
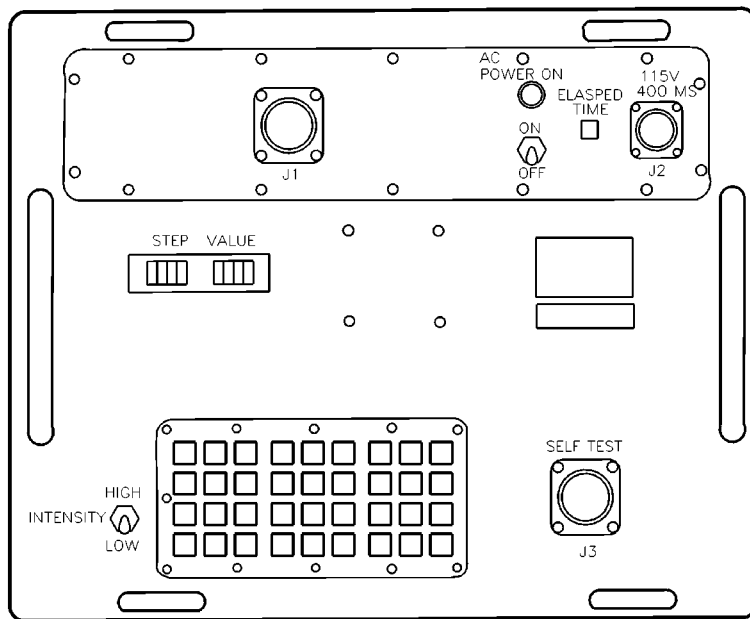
# A1-F18AE-LWS-000

## Description

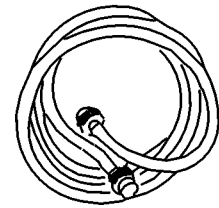


**Figure 2-138. AN/AWM-54 Aircraft Firing Circuit Test Set**



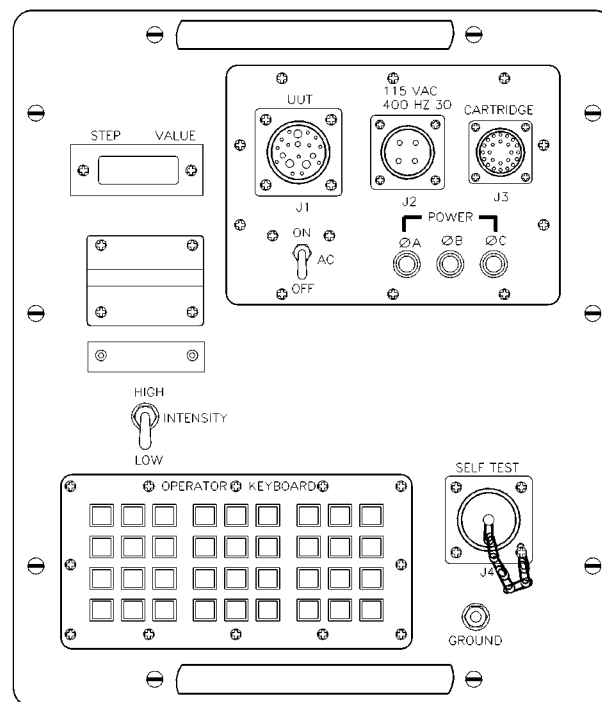


**CABLE ASSEMBLY W-4**



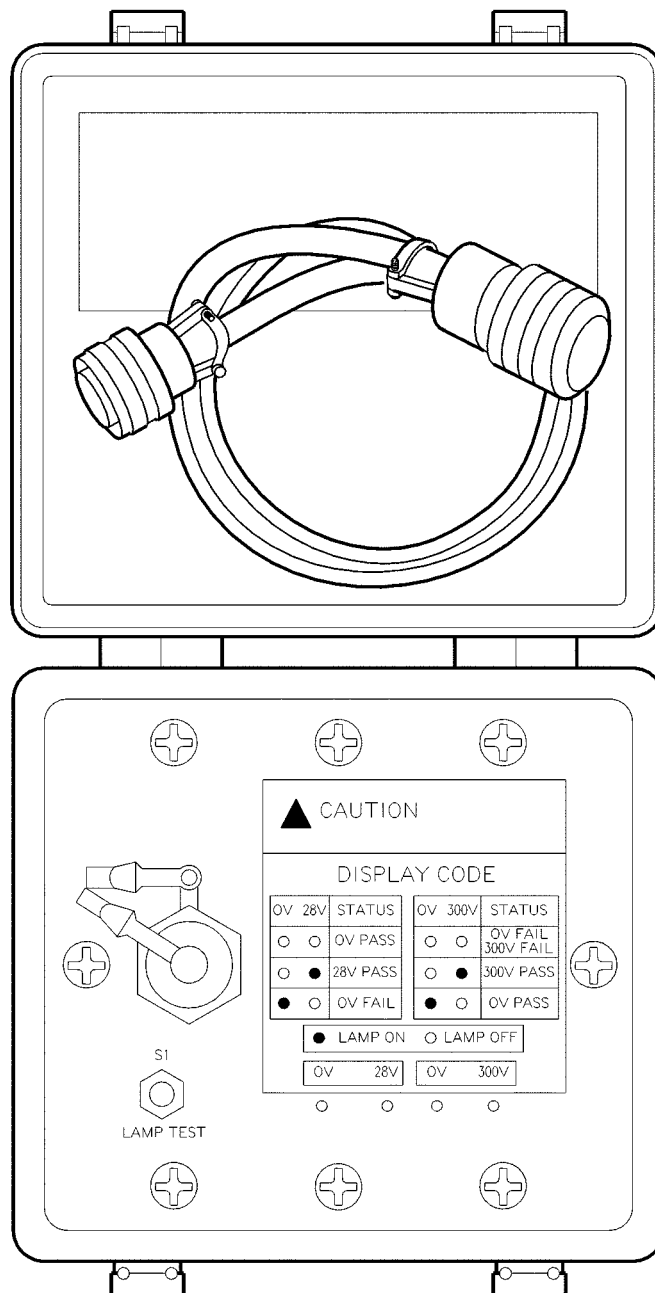
**CABLE ASSEMBLY W-1**

**Figure 2-139. AN/AWM-92 Aircraft Weapon Control Test Set**



**Figure 2-140. AN/AWM-96 Aircraft Weapon Control Test Set**

**A1-F18AE-LWS-000**  
**Description**



**Figure 2-141. A/E-24T-230 Test Set**

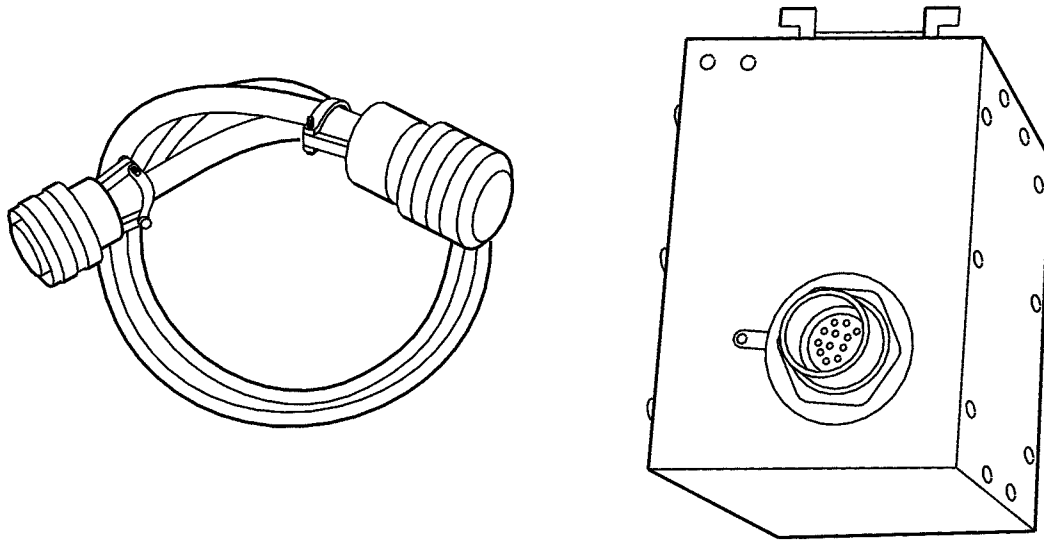


Figure 2-142. AN/AWM-100 Test Set

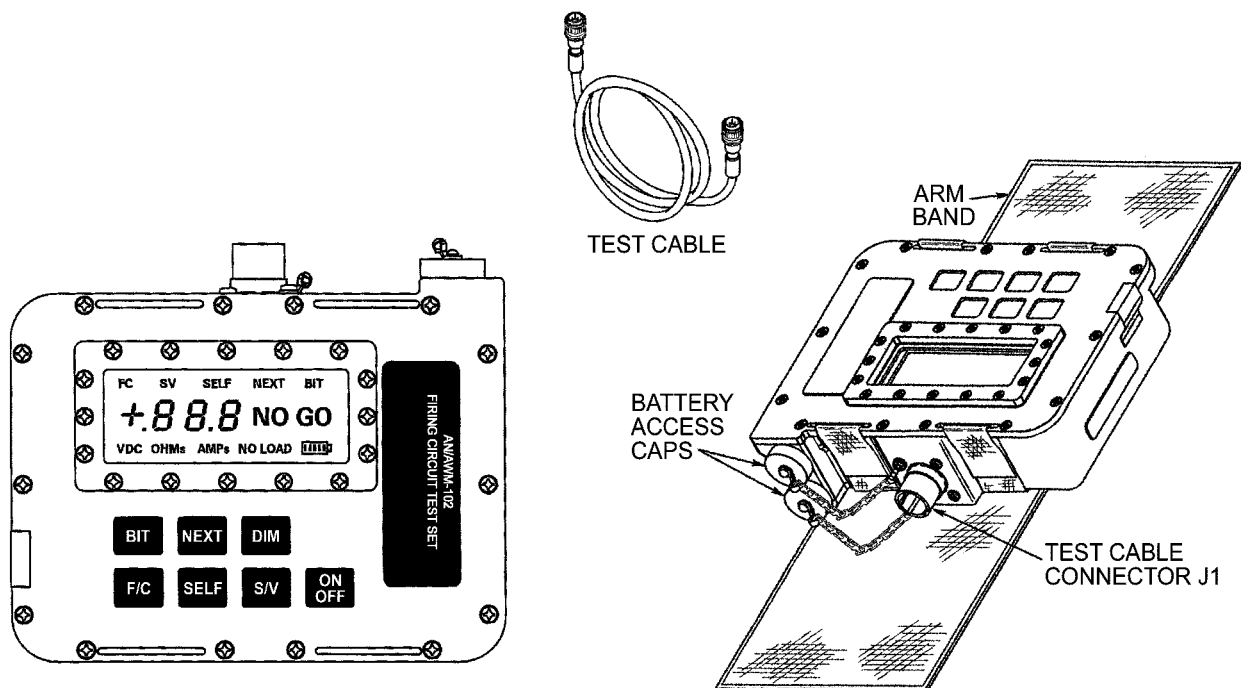


Figure 2-143. AN/AWM-102 Firing Circuit Test Set

**A1-F18AE-LWS-000**  
**Description**

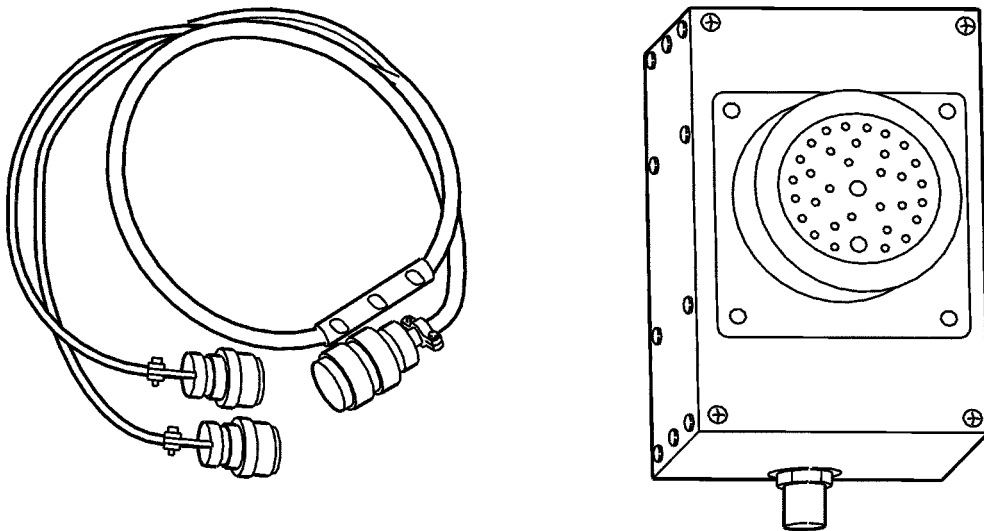


Figure 2-144. A/E-24T-216 Test Set

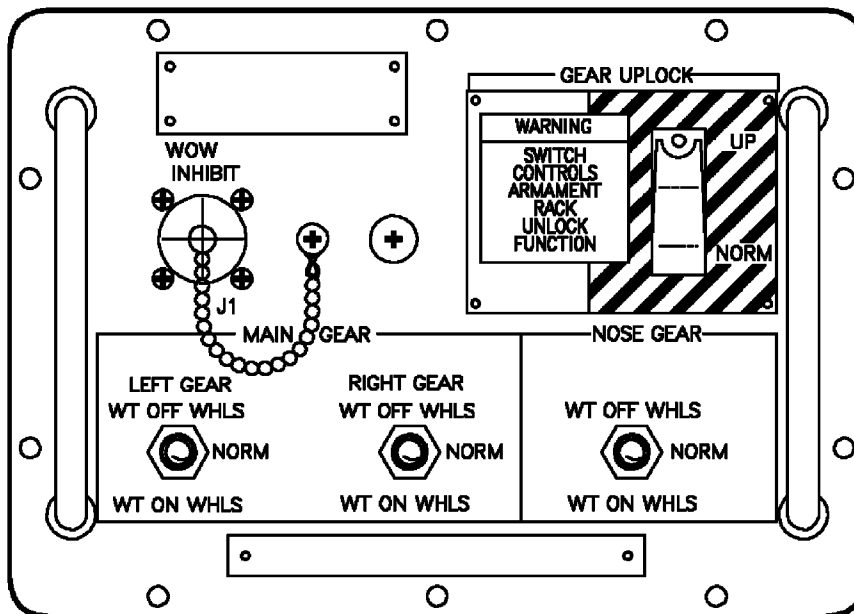


Figure 2-145. Proximity Switch Control (74D420030-1001)

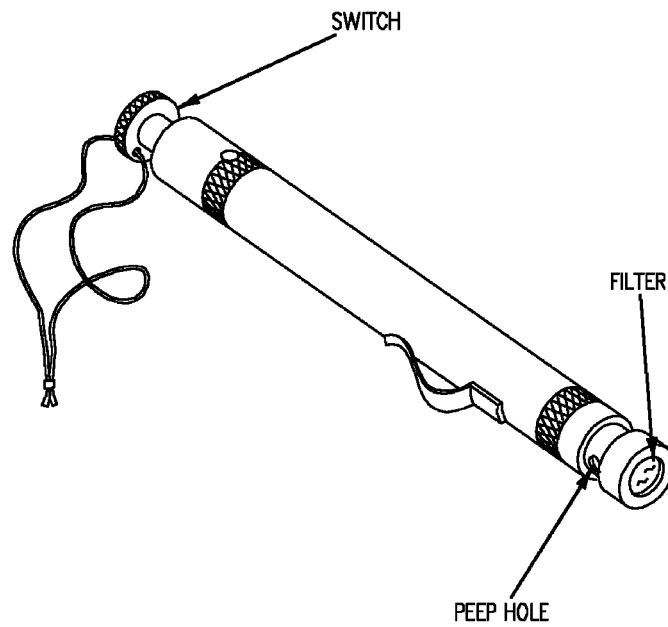


Figure 2-146. TTU-304/E Guided Missile Tester

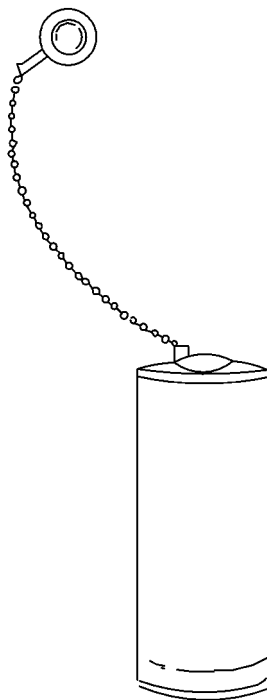
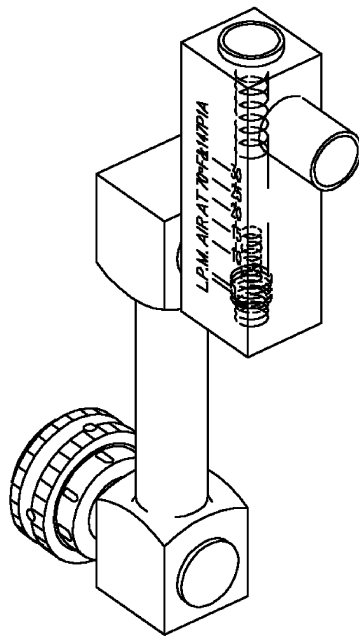
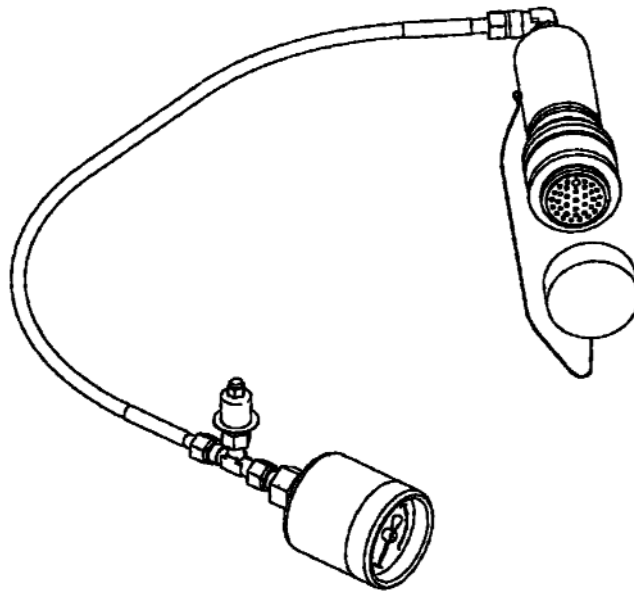


Figure 2-147. TTU-504/E Launcher Adapter Test Plug



**Figure 2-148. GMU-24A/A Flow Indicator**



**Figure 2-149. 9707 Mk 2 Pressure Gauge**

2-305. **SAFETY/PROTECTIVE DEVICES/SPECIAL TOOLS.** The following equipment is used on the aircraft and weapon/stores. This list does not preclude the use of other authorized safety/protective devices/special tools.

2-306. **MER/TER Electrical Safety Pin.** The MER/TER electrical safety pin (Figure 2-150) is inserted in the tail cone assembly of the MER/TER. When installed, the pin opens the electrical circuit to the MER/TER individual ejector units.

2-307. **LAU-7 Slotted Detent Wrench Safety Pin.** The LAU-7 slotted detent wrench safety pin (Figure 2-151) is used to prevent ground firing of the LAU-7 missile launcher. When inserted, the pin interrupts the firing circuit and is used to raise the detent during loading/unloading.

2-308. **Weight on Wheels (WOW) Wedge.** The WOW wedge (Figure 2-152) is used to activate WOW switch, located on main landing gear, in order to perform ground maintenance checks of aircraft weapon systems.

2-309. **AIM-9L/M Dome Cover.** The AIM-9L/M dome cover (Figure 2-153) protects the missile IR dome against scratches and damage and magnetically restrains the missile gyro.

2-310. **AIM-9X Dome Cover.** The AIM-9X dome cover (Figure 2-154) protects the missile IR dome against scratches and damage.

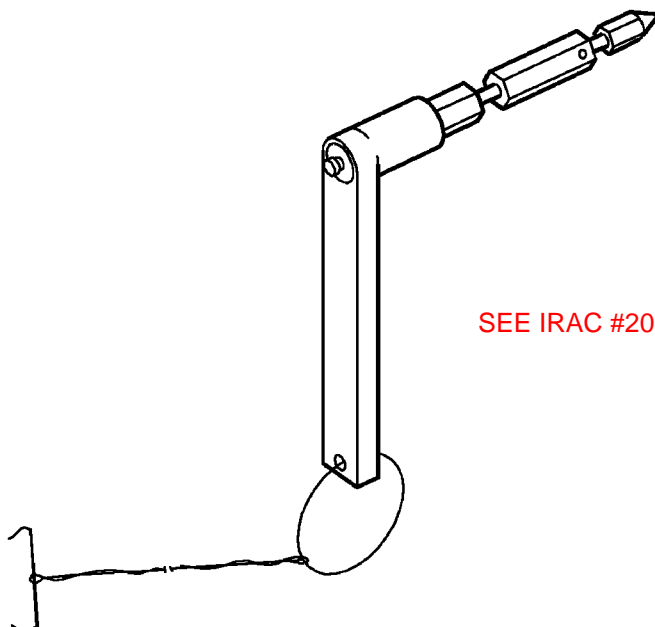


Figure 2-150. MER/TER Electrical Safety Pin

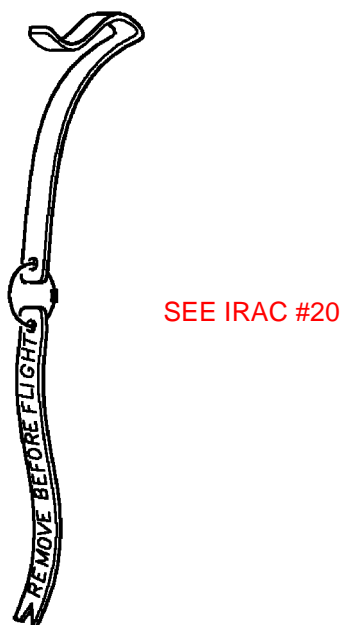


Figure 2-151. LAU-7 Slotted Detent Wrench Safety Pin

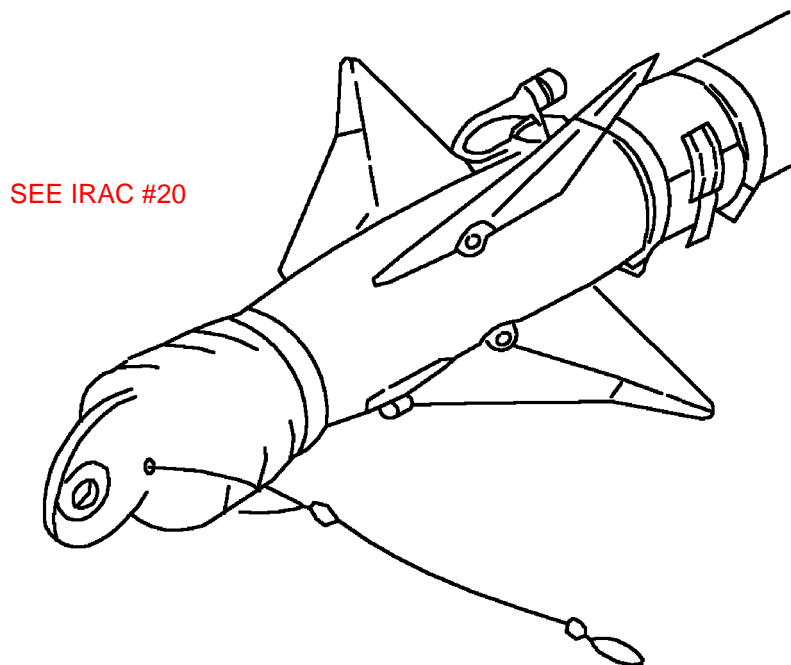


Figure 2-152. Weight On Wheels Wedge



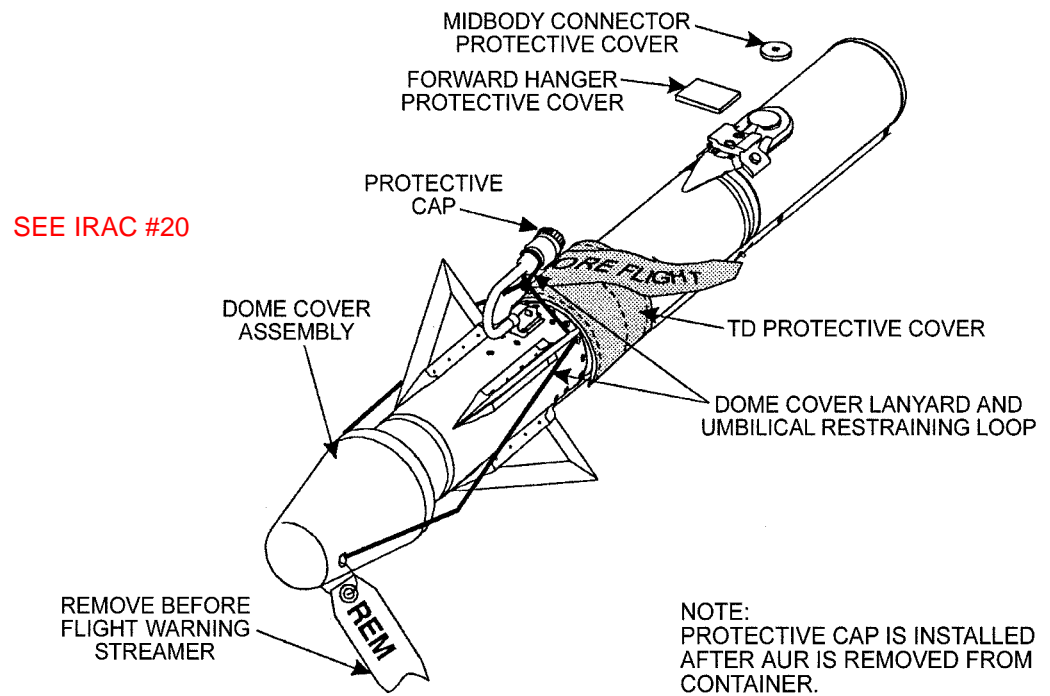


Figure 2-153. AIM-9L/M Dome Cover

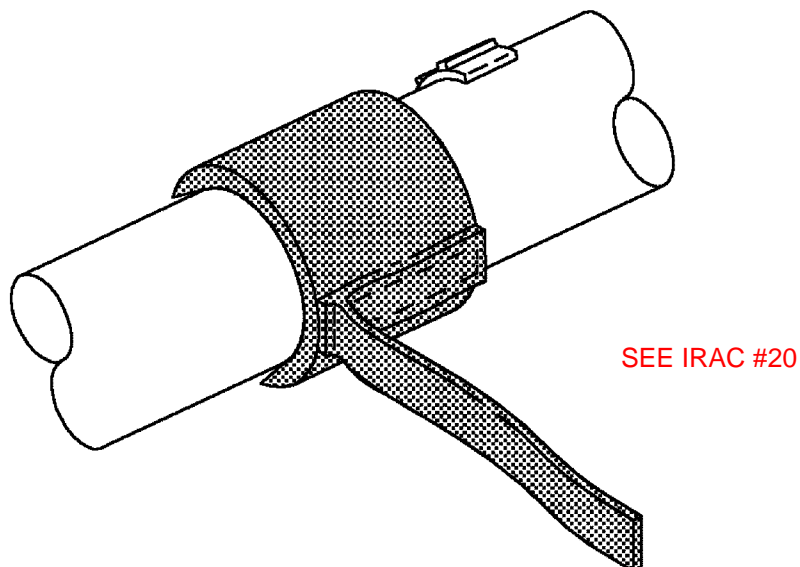


Figure 2-154. AIM-9X Dome Cover and TD Cover

**Description**

2-311. **AIM-9L/M TDD Cover.** The AIM-9L/M TDD cover (Figure 2-155) protects the missile TDD from scratches, moisture, and smudges.

2-312. **AIM-9X TD Cover.** The AIM-9X TD cover (Figure 2-154) protects the missile TD from scratches, moisture, and smudges.

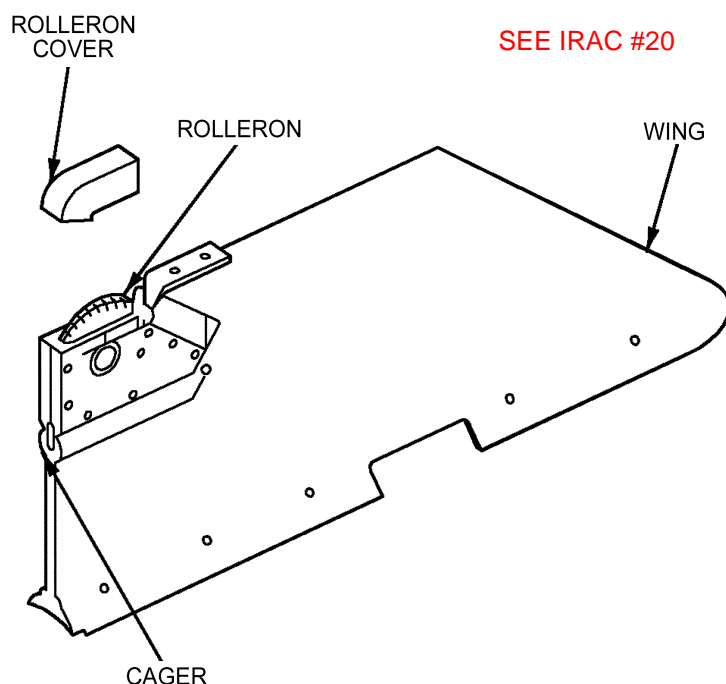
2-313. **AIM-9L/M Rolleron Cover.** The AIM-9L/M rolleron cover (Figure 2-156) protects the rollerons against damage during missile handling/loading.

2-314. **AIM-9L/M Coolant Tank Removal Tool.** The coolant tank removal tool (Figure 2-157) is used to remove the argon coolant pressure tank from the guidance and control section.

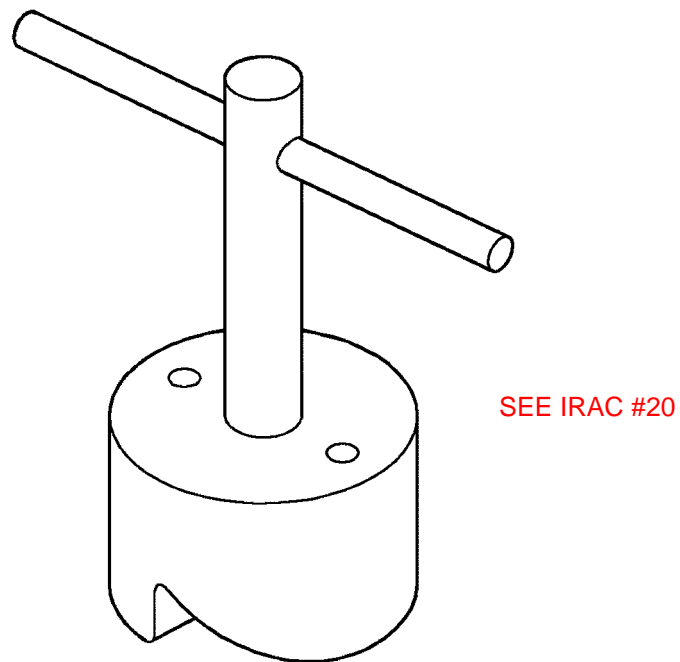
2-315. **CBU Fuze Protective Covers.** The CBU fuze protective covers (Figure 2-158) are installed on the weapon noses to protect the fuzes from damage.

2-316. **GBU Detector Cover and Packing.** The GBU detector cover and packing (Figure 2-159) prevents damage to the weapon detector window and prevents detector movement.

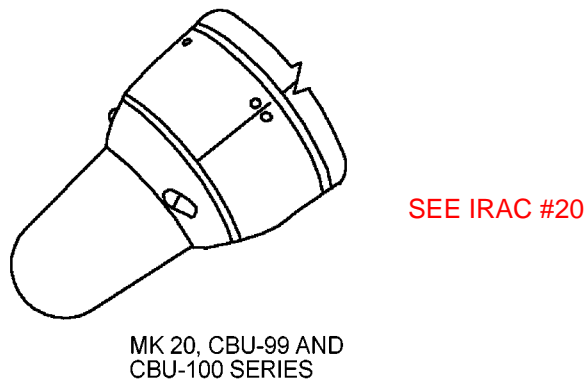
2-317. **AIM-120 Protective End Cap.** The AIM-120 protective end cap (Figure 2-160) protects the missile data link antenna during transporting and handling when installed on the aft end of the missile.



**Figure 2-155. AIM-9L/M TDD Cover**



**Figure 2-156. AIM-9L/M Rolleron Cover**



**Figure 2-157. AIM-9L/M Coolant Tank Removal Tool**

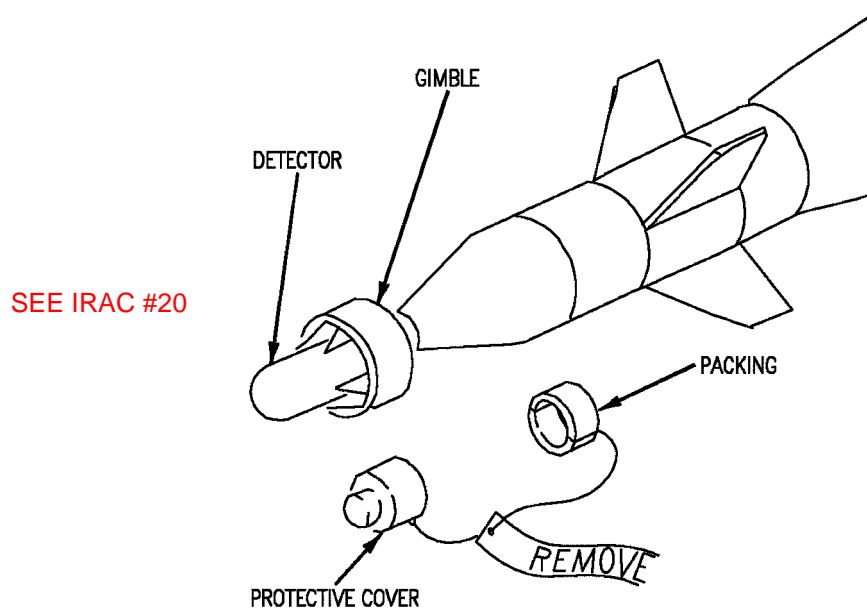


Figure 2-158. CBU Fuze Protective Covers

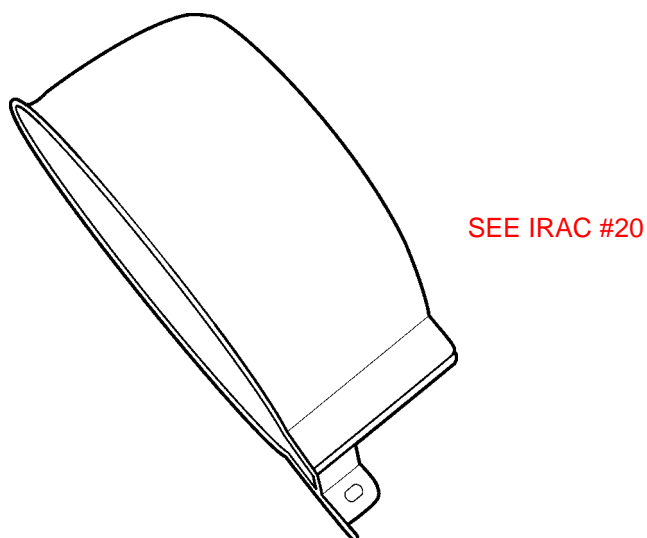
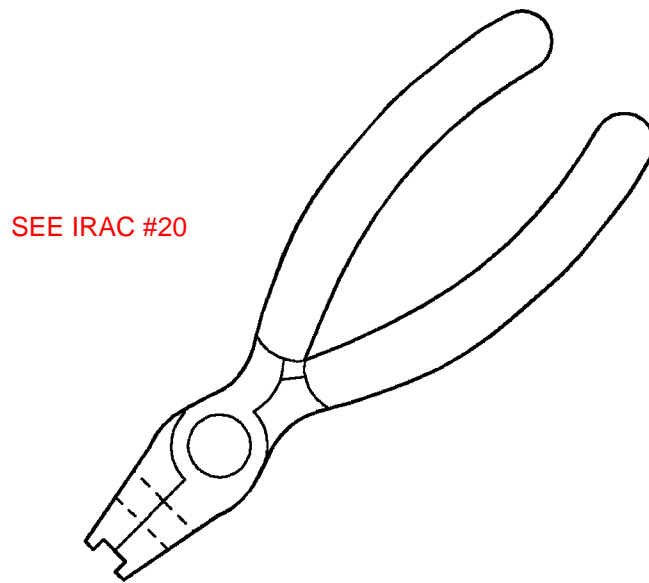


Figure 2-159. GBU Detector Cover and Packing



**Figure 2-160. AIM-120 Protective End Cap**

2-318. **Wing Unlock Pliers.** The wing unlock pliers (Figure 2-161) are used on the AIM-7 missile for wing removal and replacement.

2-319. **AIM-7F/7M/7M H-Build Wing Lock Tool.** The AIM-7F/7M/7M H-Build wing lock tool (Figure 2-162) is used to check for proper wing installation by measuring lock ring expansion after the wing is installed.

2-320. **AIM-120 Fin Installation/Removal Tool.** The AIM-120 fin installation/removal tool (Figure 2-163) is used on the AIM-120 missile fin engagement nut for proper fin installation and removal.

2-321. **Handcrank (M61 Gun).** The handcrank (M61 gun) (Figure 2-164) is used to actuate the M61 gun ammunition handling system at the low rotational speed required during certain phases of gun loading/unloading operations.

2-322. **Gun Powerpack Adapter.** The gun/powerpack adapter (Figure 2-165) is used in conjunction with the multi-purpose powerpack to load and unload the M61 gun and ammunition feed subsystem.

2-323. **Hook Release Tool.** The hook release tool (Figure 2-166) is used to open the self-latching hooks of the individual bomb racks on the MER/TER.

2-324. **LAU-10 Detent Lift Tool.** The LAU-10 detent lift tool (Figure 2-167) is used to rotate the detent lift handles in the LAU-10 rocket launcher to the LOAD and FIRE positions.

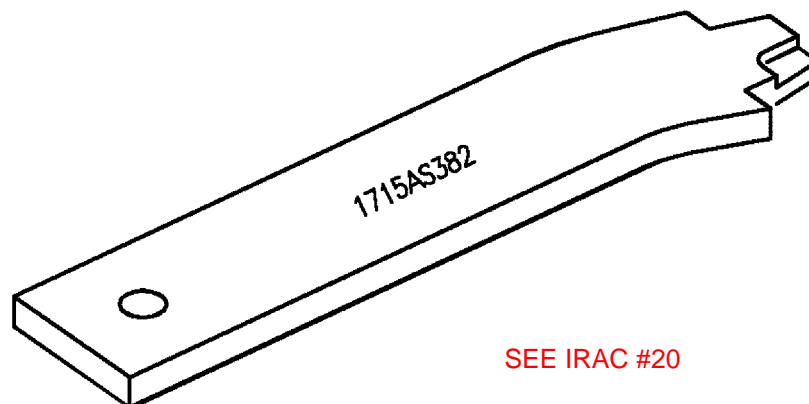


Figure 2-161. Wing Unlock Pliers

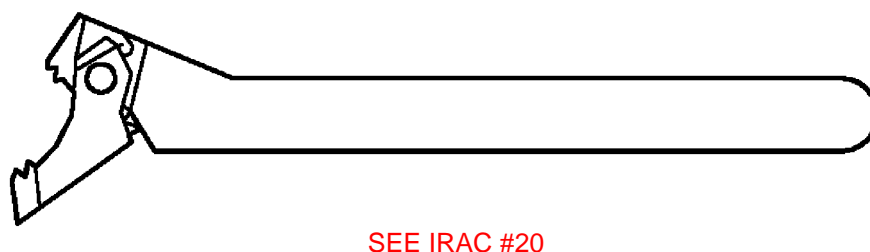


Figure 2-162. AIM-7F/7M/7M H-Build Wing Lock Tool

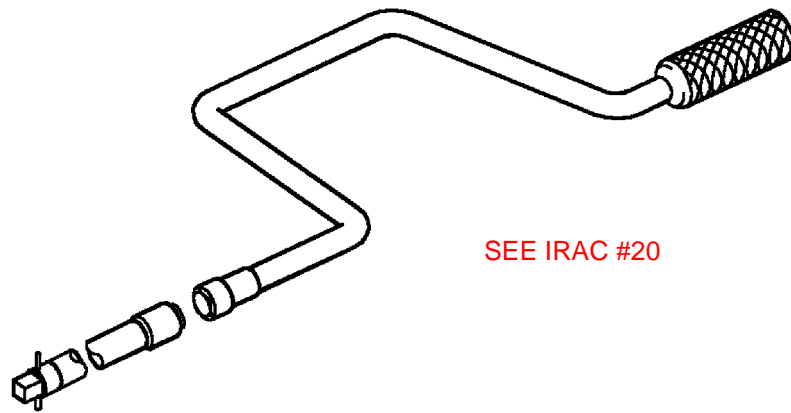


Figure 2-163. AIM-120 Fin Installation/Removal Tool

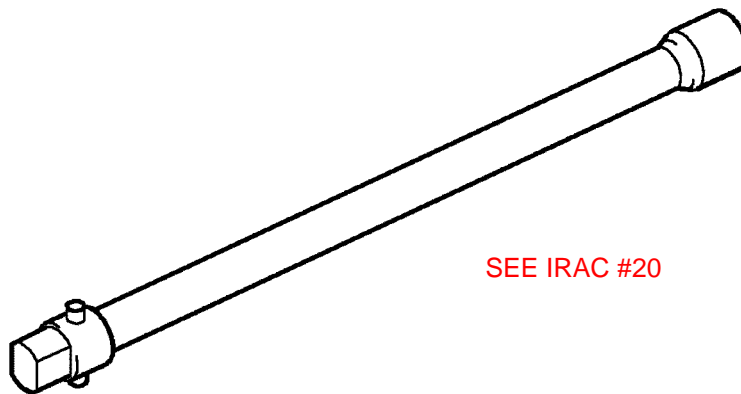
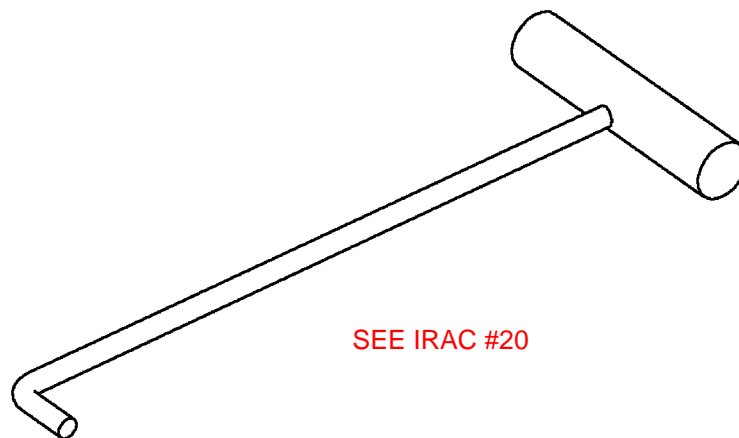
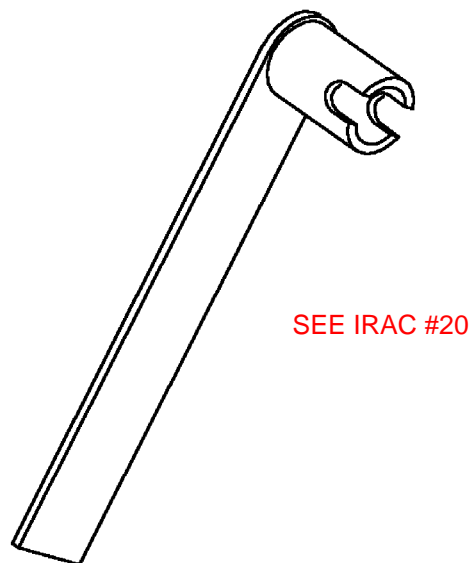


Figure 2-164. Handcrank (M61 Gun)



**Figure 2-165. Gun Powerpack Adapter**



**Figure 2-166. Hook Release Tool**



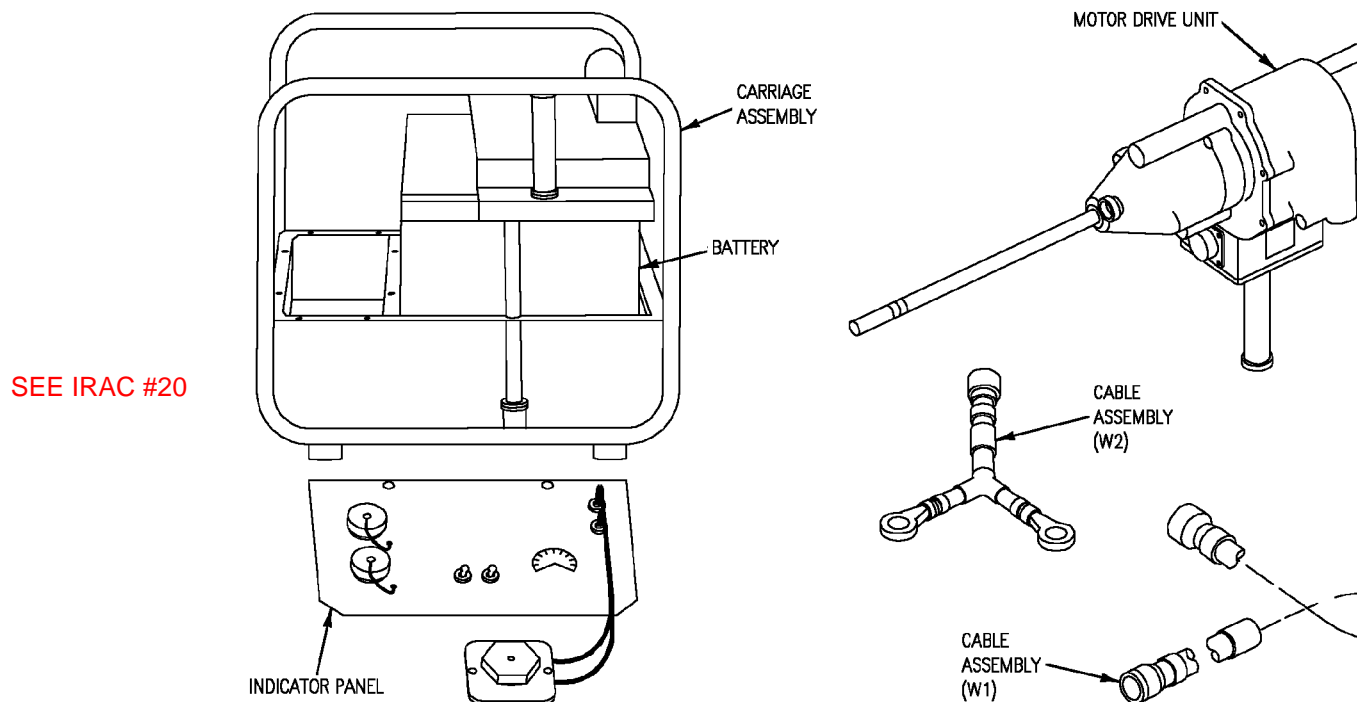


Figure 2-167. LAU-10 Detent Lift Tool

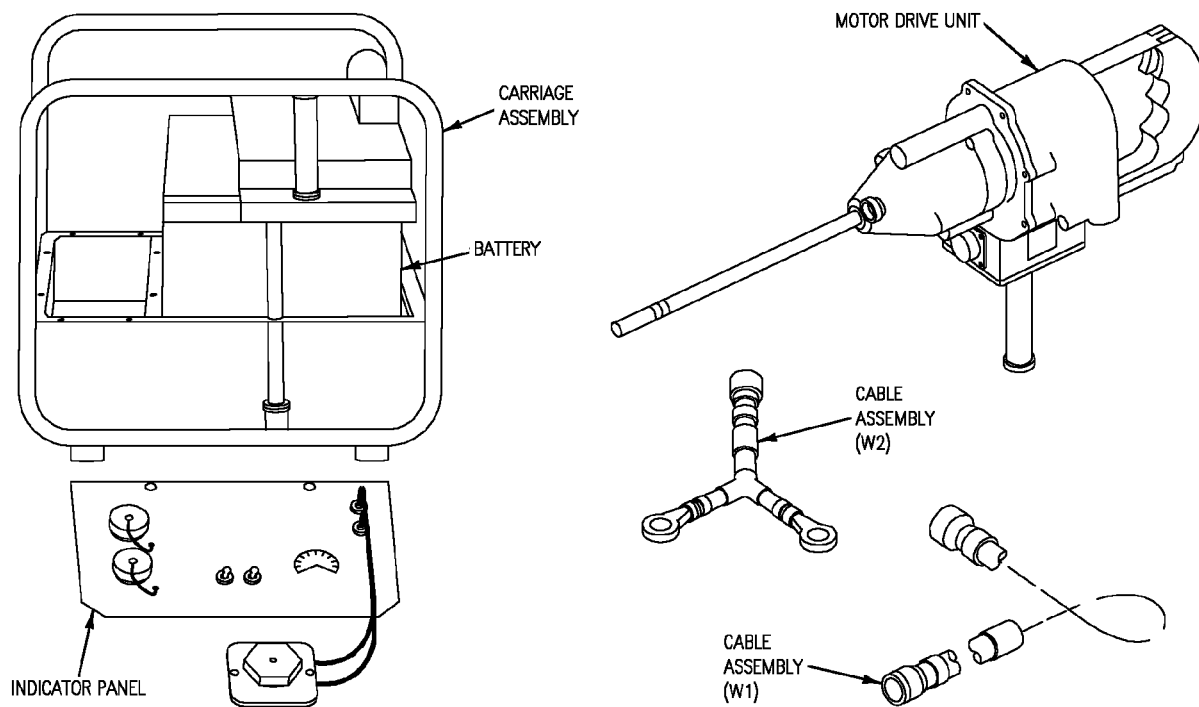
2-325. **Battery and Motor Drive Unit.** The ammunition loading battery and motor drive unit (Figure 2-168) is used to cycle the M61 gun system during ammunition loading and unloading. The carrier assembly contains a 24-volt lead-acid battery, an indicator panel, and cable assemblies W1 and W2. The motor drive unit is a variable speed and variable torque motor. The unit will transfer 1000 rounds to the M61 gun system in approximately 5 minutes of active motor operation.

2-326. **Multi-Purpose Powerpack.** The multi-purpose powerpack (Figure 2-169) is a reversible, multi-vane pneumatic motor. The powerpack is designed to operate with a gun/powerpack adapter for loading or unloading the M61 gun and ammunition feed subsystem. A rotational selector on the powerpack provides either clockwise or counterclockwise direction of rotation. Only clockwise rotation can be used for loading or unloading the gun and ammunition feed subsystem.

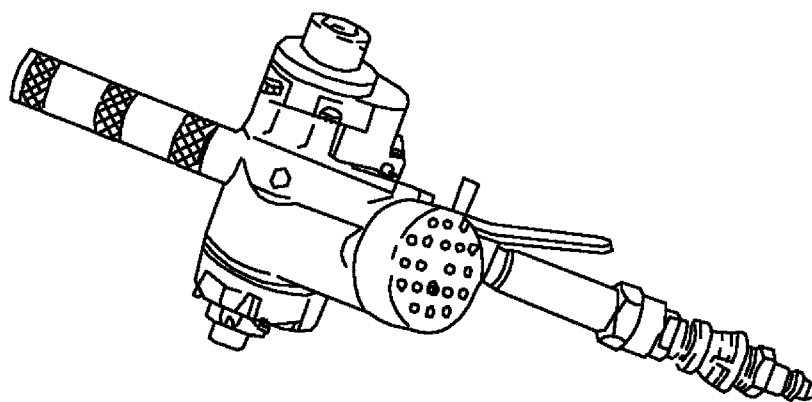
2-327. **AGM-84H/K Protective Devices.** The AGM-84H/K protective devices (Figure 2-170) consist of a nose cover assembly, electrical connector protective cap, air data probe (ADP) cover, engine exit cover, and booster snap lock cover.

2-328. **GBU-CCG Switch Key.** The GBU-CCG Switch Key (PN 1393AS450) (Figure 2-171) is used to verify/set GBU-CCG switches when one or more of the GBU switches is missing.

**A1-F18AE-LWS-000**  
**Description**



**Figure 2-168. Battery and Motor Drive Unit**



**Figure 2-169. Multi-Purpose Powerpack**

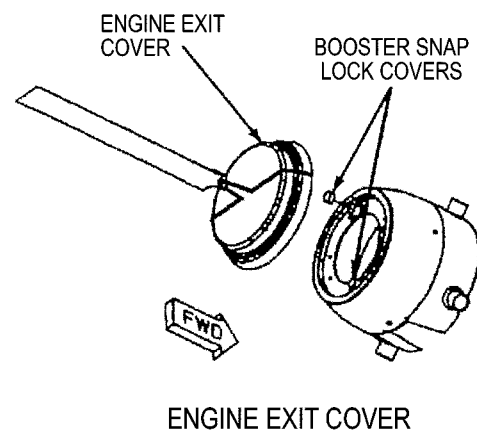
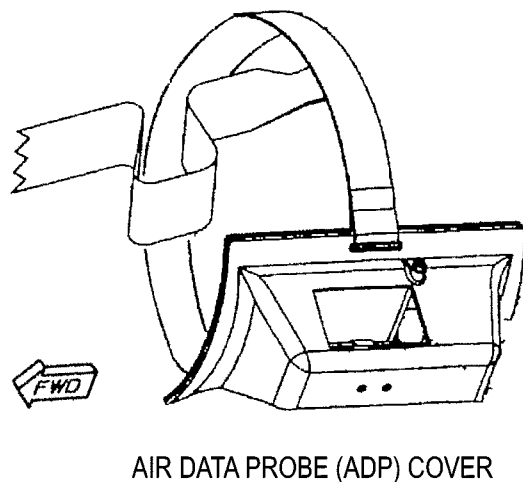
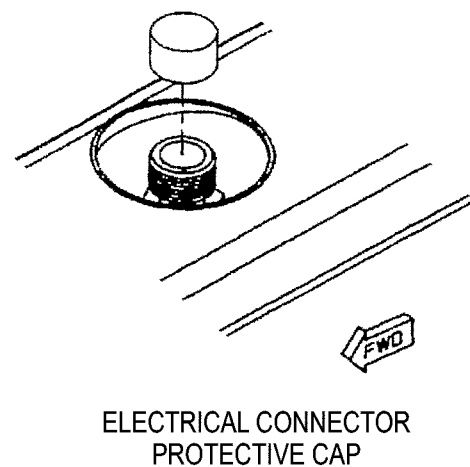
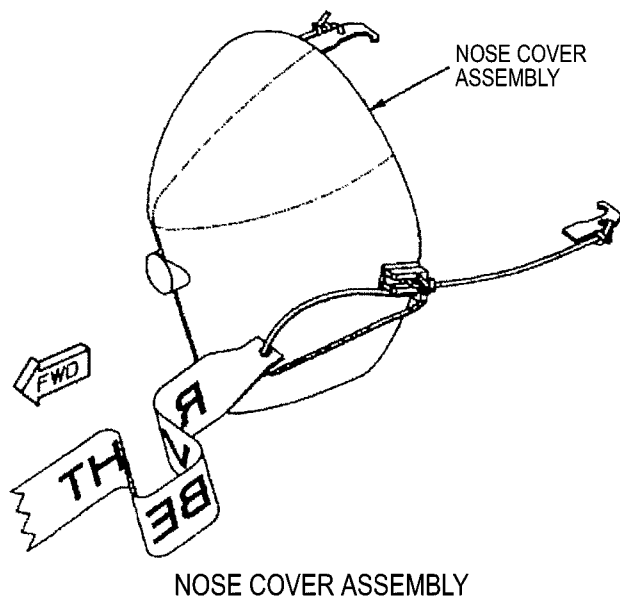
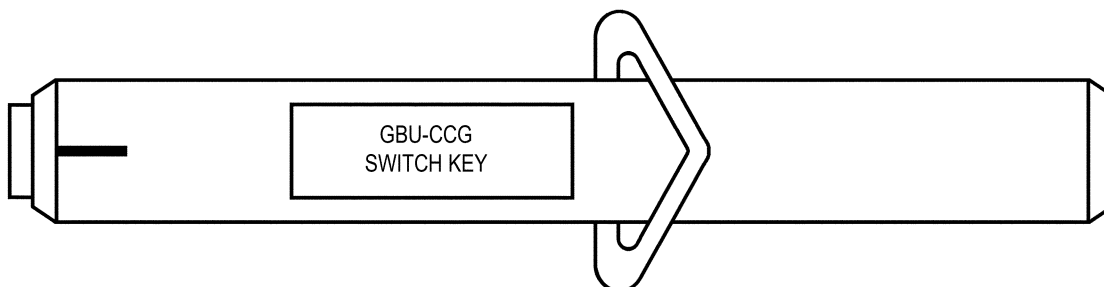


Figure 2-170. AGM-84H/K Protective Devices

**Description**



**Figure 2-171. GBU-CCG Switch Key**

## **SECTION III**

### **CONFIGURATION DATA**

#### **3-1. INTRODUCTION.**

3-2. This section contains data concerning the aircraft configuration capabilities and aircraft suspension/ accessory equipment. Tables are provided to list equipment to be installed on the aircraft during configuration changes.

#### **3-3. AIRCRAFT CONFIGURATION CONVERSION.**

3-4. Refer to Figure 3-1 for station configuration capabilities. The basic armament configuration of the F/A-18A/B/C/D Aircraft consists of LAU-116 Missile Launchers, wing tip mounted LAU-7 Missile Launchers, SUU-63 Pylons, SUU-62 Pylon, BRU-32 Bomb Racks and a M61 Gun (Figure 3-2).

3-5. Table 3-1 lists the accessories and items required for conversion from basic aircraft configuration to each weapon/store configuration.

#### **NOTE**

Refer to NWP 3-22.5 F/A18 Vol. IV A1-F18AC-TAC-020/(C) for authorized loading.

#### **3-6. INSTALLATION AND REMOVAL OF ACCESSORY SUSPENSION EQUIPMENT (ASE).**

#### **NOTE**

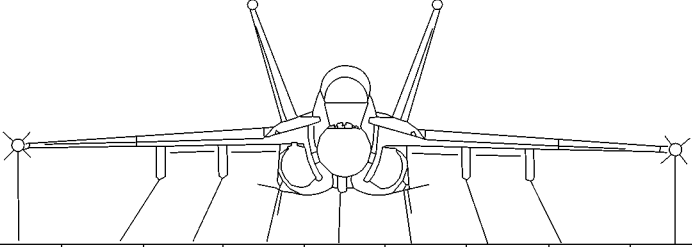
Conversion from basic armament configuration to weapon/store requires that the applicable A1-F18AC-740-300 (F-18A/B) or A1-F18AE-740-300 (F-18C/D) manual be referenced to verify the adapter cable required matches the aircraft effectivity.

3-7. The following procedures provide installation and removal of externally mounted accessory suspension equipment on the BRU-32 Rack. Procedures are based on the premise that the accessory suspension equipment is bench checked prior to delivery to the aircraft, or the accessory suspension equipment and adapter cable is prechecked on an aircraft within the past 7 days and that an aircraft has been prepared in accordance with the applicable procedures in Section V.

**3-8. INSTALLATION OF ARMAMENT SUSPENSION EQUIPMENT (ASE) ON BRU-32 RACK.**  
Install MER, BRU-41, BRU-42, BRU-33 or LAU-115 as follows:

1. Position all armament switches in accordance with Table 5-1.
2. (If applicable) Power removed.
3. Remove CARTRIDGE RETAINERS, auxiliary cartridge cap and verify cartridges are removed from station where ASE is to be installed.
4. Verify that BRU-32 breech chambers are clean and undamaged.
5. Open BRU-32 suspension hooks (Paragraph 5-7).

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**Configuration Data**



EQUIPMENT	9	8	7	6	5	4	3	2	1
SUU-62 PYLON					X				
LAU-116 SERIES LAUNCHER				X		X			
MER/BRU-41/BRU-42		X	X				X	X	
BRU-33 (VER)		X	X		X		X	X	
BRU-32 BOMB RACK		X	X		X		X	X	
SUU-63 PYLON		X	X				X	X	
LAU-117 LAUNCHER		X	X				X	X	
LAU-118 LAUNCHER		X	X				X	X	
LAU-115 SERIES LAUNCHER		X	X				X	X	
LAU-115 SERIES LAUNCHER WITH TWO LAU-7 OR LAU-127 LAUNCHERS		X						X	
LAU-115C/A WITH TWO LAU-127 LAUNCHERS		X	X				X	X	
LAU-7 LAUNCHER	X								X

**Figure 3-1. Station Configuration Capabilities**

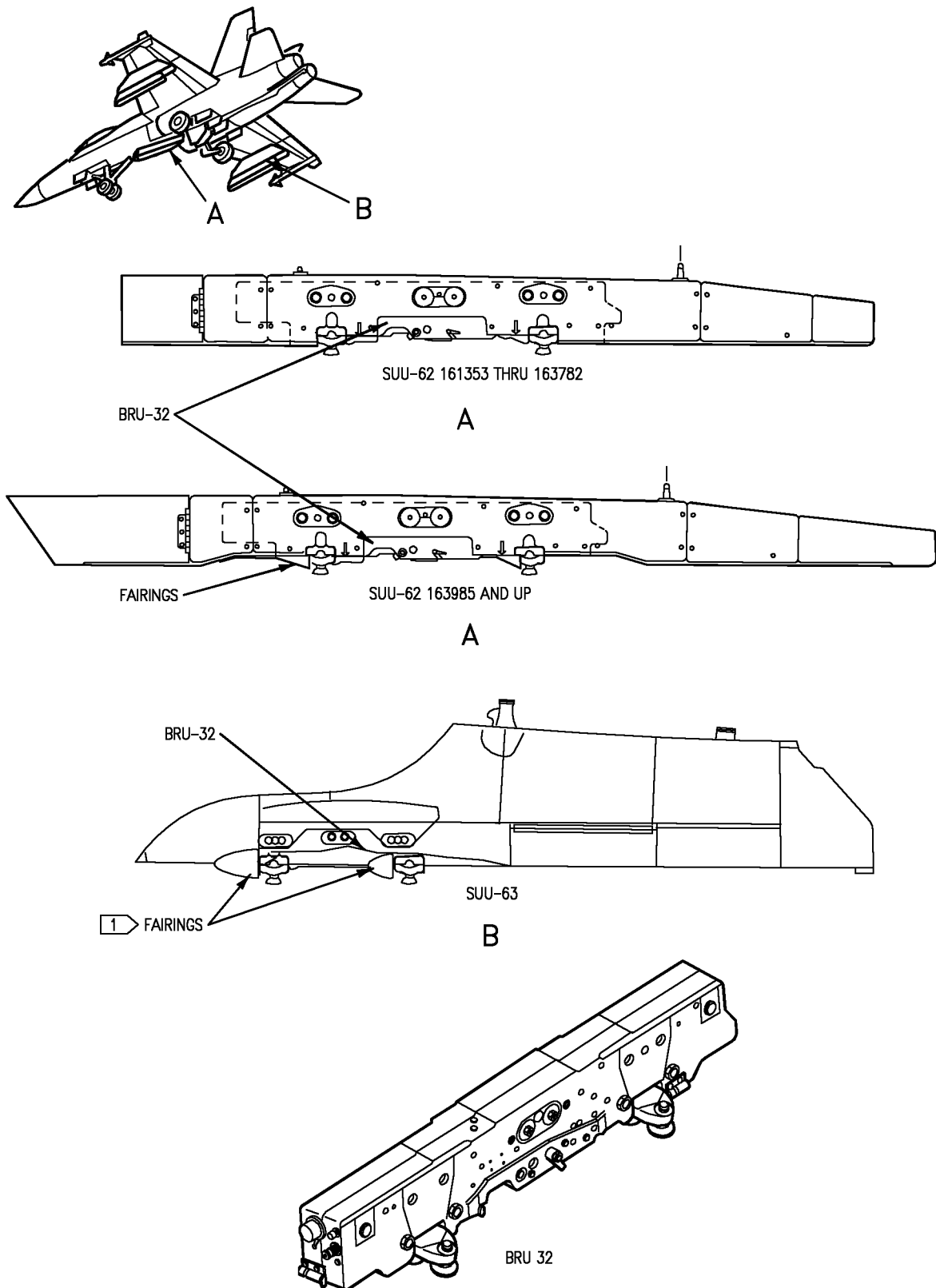
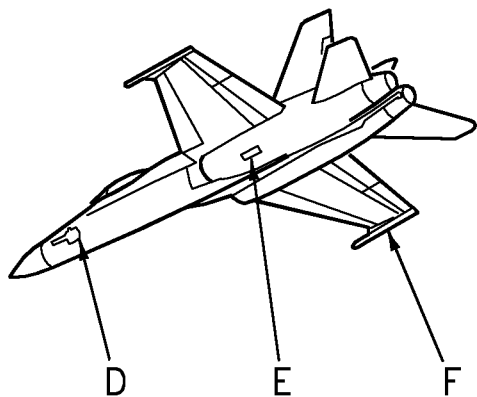


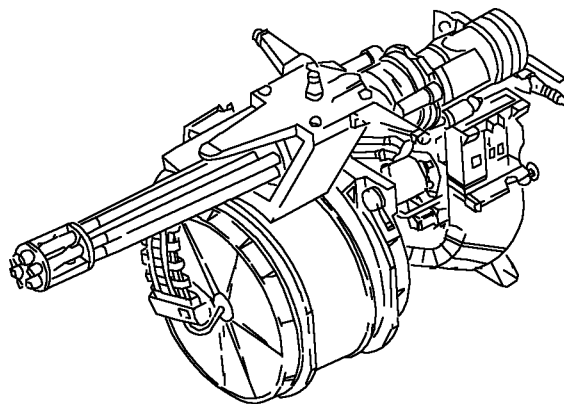
Figure 3-2. Basic Armament Configuration (Sheet 1 of 2)

**A1-F18AE-LWS-000**  
**Configuration Data**

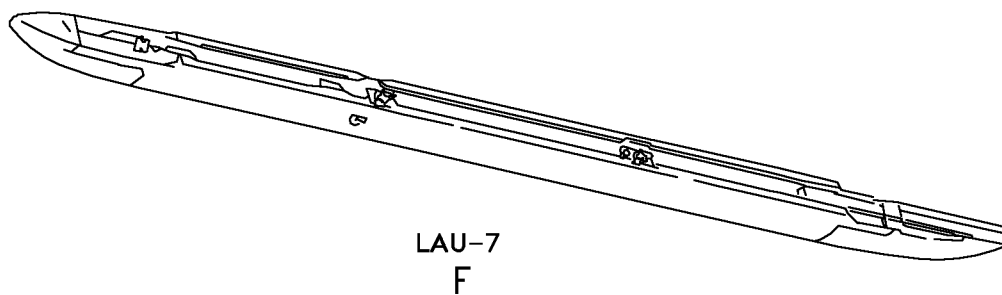
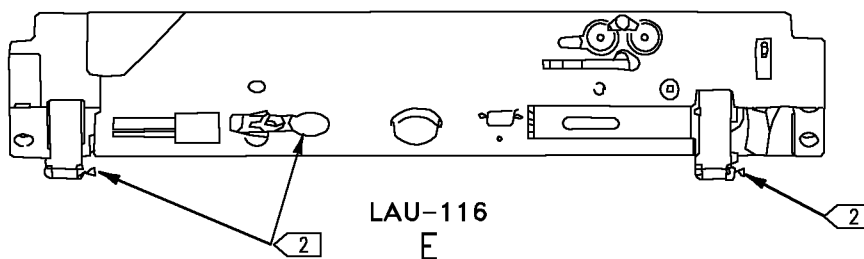


**LEGEND**

- 1 163985 AND UP
- 2 163427 AND UP



**M61 GUN**  
**D**



**NOTE**

LAU-7/A-6; 161353 THRU 163782.

LAU-7B/A; 163985 AND UP.

**Figure 3-2. Basic Armament Configuration (Sheet 2)**



**Table 3-1. Conversion from Basic Armament Configuration to Weapon/Store**

WEAPON/STORE	EQUIPMENT		ADAPTER CABLE CONNECTIONS		
	ACCESSORY	ADAPTER CABLE	ADAPTER CABLE PLUG	WING PYLON BRACKET	CENTERLINE CONNECTOR PLATE
GP BOMBS (Retard/Nonretard), Mk 62, LAU-10/61/68 (Note 1)	BRU-33 (Centerline)	74A756226- 9AAC/9FAA	61P-Y112 61P-Y102		52J-Z065 61J-Z162
	BRU-33 (Wing Pylon)	74A756232- 9AAC/9FAA	61P-Y112 61P-Y102	A/G FUZING	
PRACTICE BOMBS, (Note 2), LGTR (Note 3)	BRU-41/A (Wing Station) MER	1453AS395	61P-Y112	A/G	
		1453AS300			
TALD/ITALD	BRU-42/A (Wing Station)	1453AS395	61P-Y112	A/G	
AIM-9, AIM-7, AIM-120	LAU-115C/A, D/A	74A756235- 9FCA	61P-W093 61P-W112	A/A A/G	
		or 427HN0900			
AIM-9, AIM-120	LAU-127A/A	74A756235- 9FCA	61P-W093 61P-W112	A/A A/G	
AGM-65	LAU-117	74A756227- 9FAA/9BDA	61P-W112 61P-W102	A/G FUZING	
		74G756227- 9BAB (Note 4)	61P-W096	VIDEO	
AGM-84D/E (Harpoon/SLAM)		74A756236- 9FAA/9AAA (Note 5)	61P-W093 61P-W112	A/A A/G	
AGM-84H/K (SLAM ER)		74A756247- 9AAA or N00- 421RW56247	61P-W093 61P-W112 61P-Y096	A/A A/G VIDEO	
AGM-88	LAU-118	74A756228- 9BAA/9FAA/ 9FEA	61P-W112	A/G	
AGM-154 (JSOW)		74A756247- 9AAA	61P-W093 61P-W112 61P-W096	A/A A/G VIDEO	
AN/ALE-43		1611AS685			
AN/ALQ-167		1611AS684	61P-Y024	AMAC	
AN/AWW-13 (Centerline)		74A756248- 9AAA	61P-R282 61P-R284		52J-Z065 61J-Z168

**A1-F18AE-LWS-000**  
**Configuration Data**

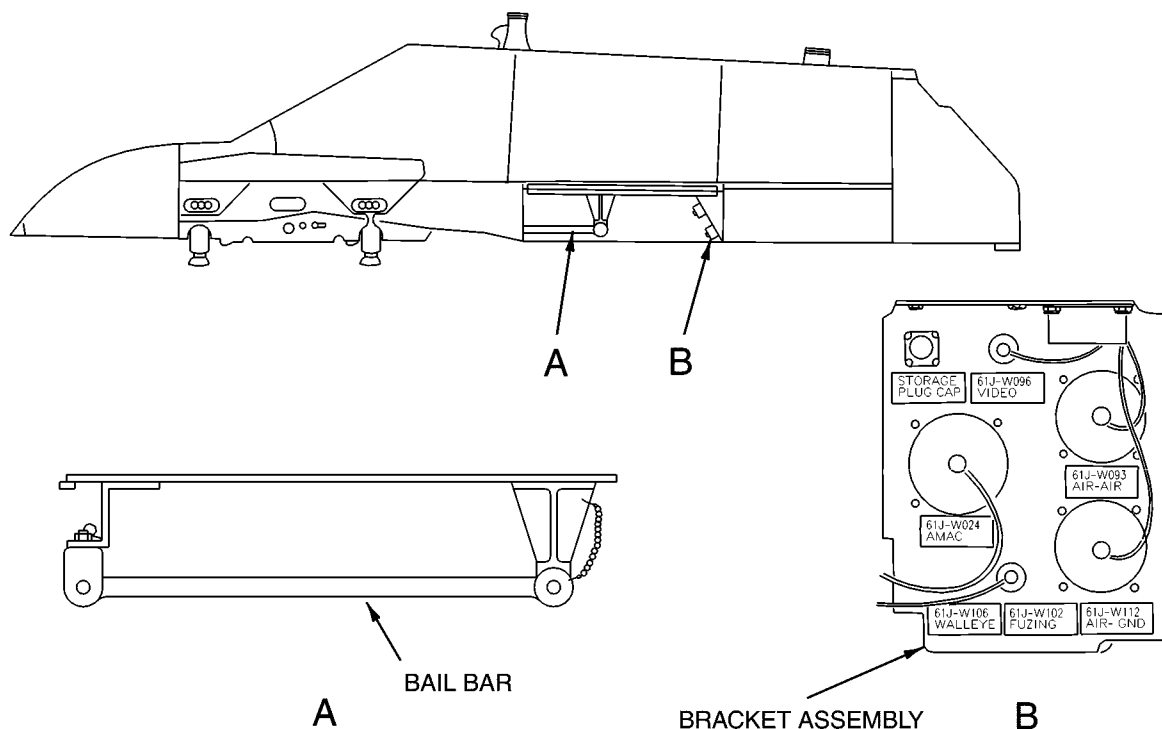
**Table 3-1. Conversion from Basic Armament Configuration to Weapon/Store (Continued)**

WEAPON/STORE	EQUIPMENT		ADAPTER CABLE CONNECTIONS		
	ACCESSORY	ADAPTER CABLE	ADAPTER CABLE PLUG	WING PYLON BRACKET	CENTERLINE CONNECTOR PLATE
AN/AWW-13 (Wing Station)		74A756247- 9AAA or N00- 421RW56247	61P-W093 61P-W112 61P-Y096	A/A A/G VIDEO	52P-R065 89J-Z005 89J-Z004
ARQ-56 (ATARS) (Centerline)		74A756260- 9AAA	89P-Z079 89P-Z078		
FUEL TANK (Wing Station)		74A756230- 9FAA 9AAB	61P-Y112	A/G	
FUEL TANK (Centerline)		74A756230- 9FAA 9AAB	61P-Y112		
GBU-24E/B, G/B		74A756247- 9AAA or N00- 421RW56247	61P-W093 61P-Y112 61P-Y096	A/A A/G VIDEO	
GBU-31 (JDAM)		74A756247- 9AAA or N00- 421RW56247	61P-W093 61P-W112 61P-Y096	A/A A/G VIDEO	
GBU-32/35 (JDAM)		N00-421R- W56247	61P-W093 61P-W112 61P-Y096	A/A A/G VIDEO	

**NOTE**

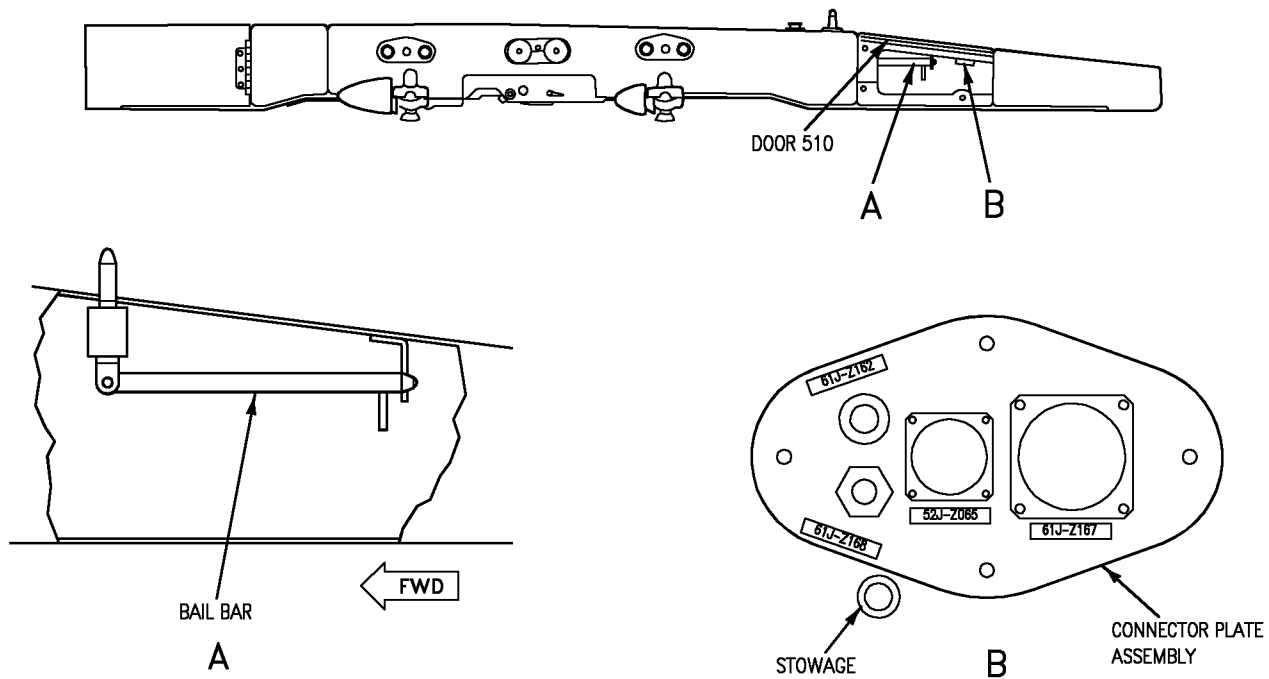
1. Rocket pod cable uses cable P/N 3036AS140 or J014093-1 from BRU-33 Station.
2. (Practice bombs) Requires Practice Bomb Adapter Kit 1348AS5000.
3. (LGTR) Requires Practice Bomb Adapter Kit 1348AS5000 with LGTR swaybrace adapter brackets P/N 1784AS0827.
4. (AGM-65) Adapter Cable 74G756227-9BAB does not allow aircraft to self laze.
5. (AGM-84D/E) Adapter Cable 74A756236-9AAA, useable on 161353 THRU 163782. Adapter Cable 74A756236-9FAA, useable on F/A-18C/D 163985 AND UP.

6. (If applicable) Adjust swaybrace pad assemblies to the normal position (Paragraph 5-10).
  7. Raise ASE until both suspension lugs enter BRU-32 suspension hooks and hooks latch.
  8. Gently shake ASE to verify that equipment is supported by suspension hooks.
  9. Rotate ground safety handle to the LOCKED position (Paragraph 5-6).
  10. Shake ASE to ensure swaybraces properly seated.
  11. Install and connect adapter cables to aircraft and ASE (Paragraph 3-9).
- 3-9. **ADAPTER CABLE INSTALLATION.** Install adapter cables as follows (Figures 3-3 through 3-17):
1. Inspect adapter cables prior to installation as follows:
    - a. Verify no broken, bent or missing pins.
    - b. Verify no excessive cracking or broken insulation/shielding to the extent internal wiring is visible.
    - c. Ensure receptacle housings are serviceable.
    - d. Verify cable bail not damaged.

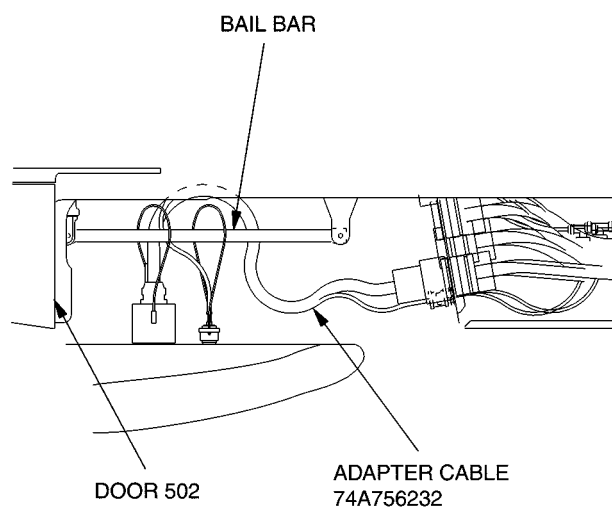


**Figure 3-3. Wing Station Adapter Cable Installation**

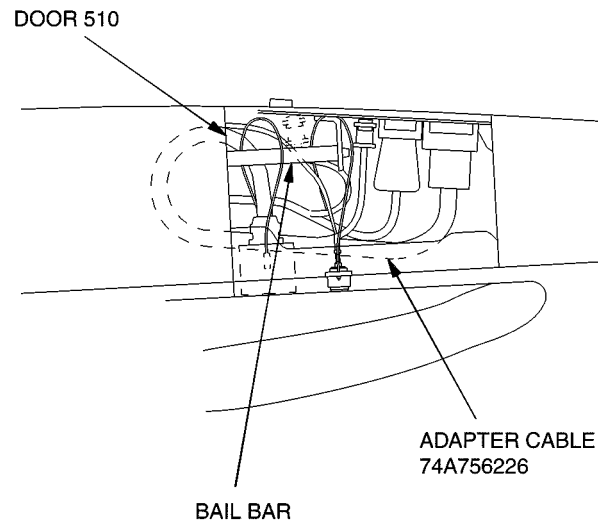
**A1-F18AE-LWS-000**  
**Configuration Data**



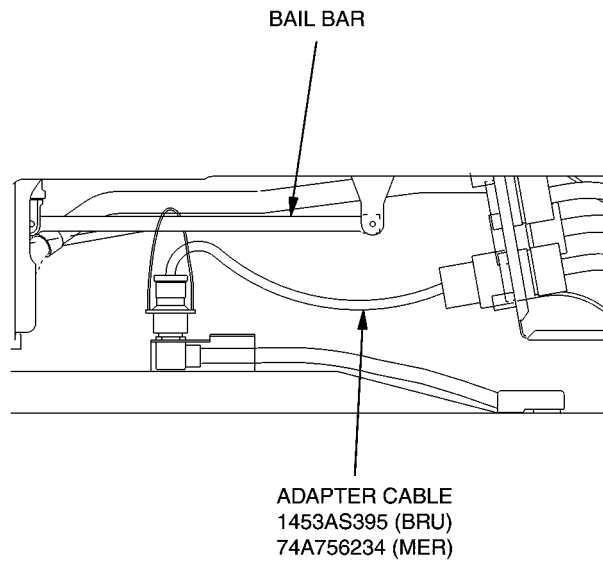
**Figure 3-4. Centerline Adapter Cable Installation**



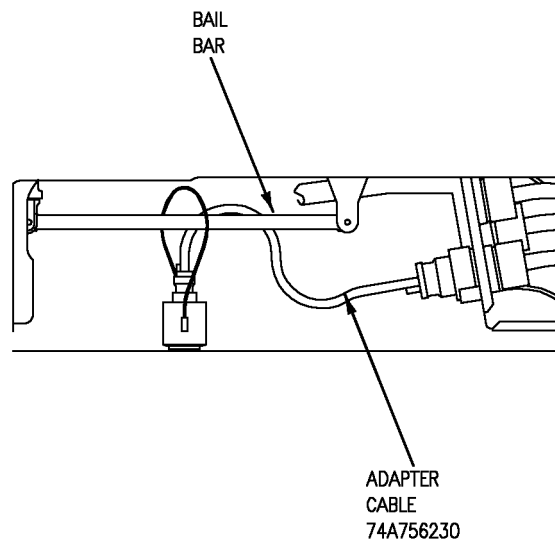
**Figure 3-5. BRU-33 Adapter Cable Installation (Wing Station)**



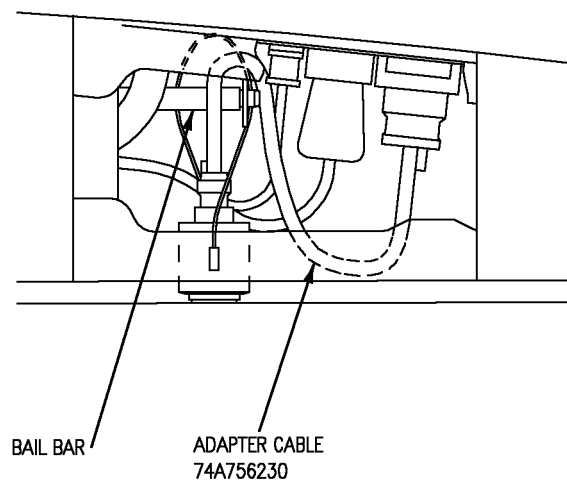
**Figure 3-6. BRU-33 Adapter Cable Installtion (Centerline Station)**



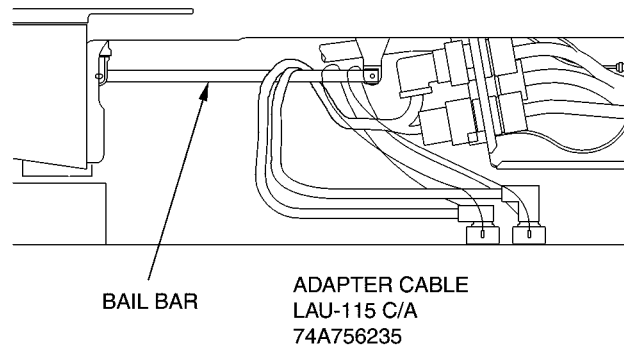
**Figure 3-7. MER/BRU-41/BRU-42 Adapter Cable Installation (Typical)**



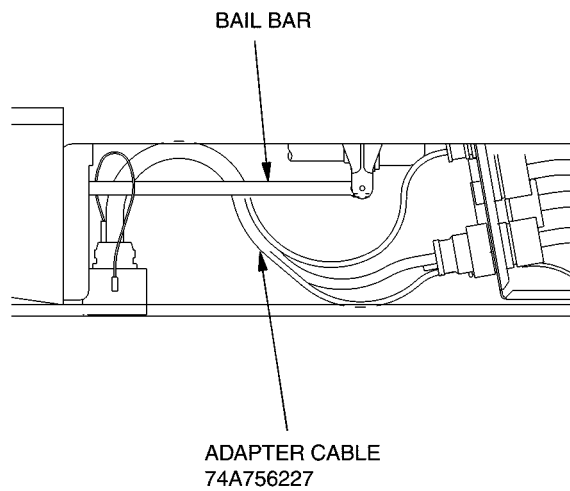
**Figure 3-8. Fuel Tank Adapter Cable Installation (Wing Station)**



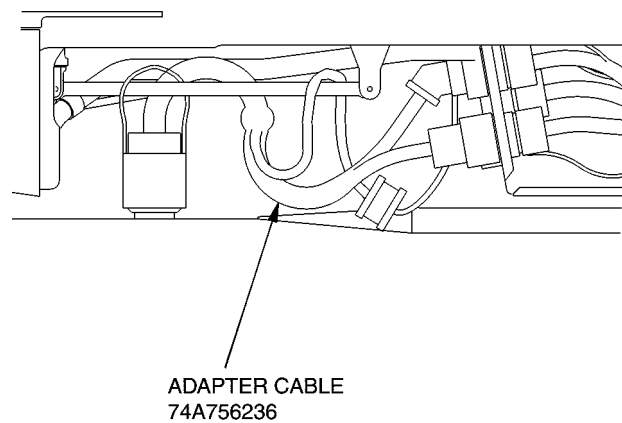
**Figure 3-9. Fuel Tank Adapter Cable Installation (Centerline Station)**



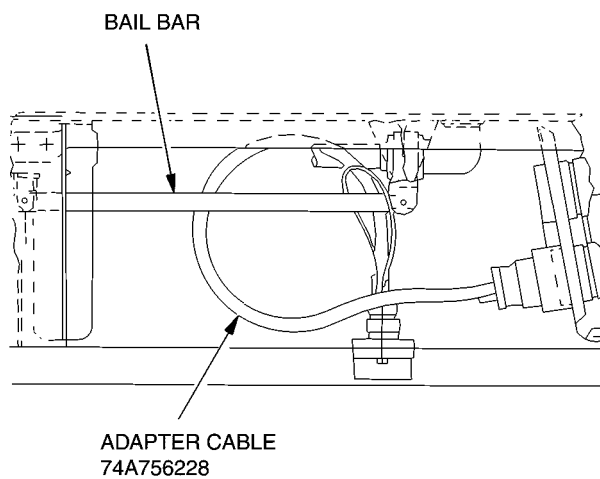
**Figure 3-10. LAU-115 Adapter Cable Installation**



**Figure 3-11. AGM-65 Adapter Cable Installation**

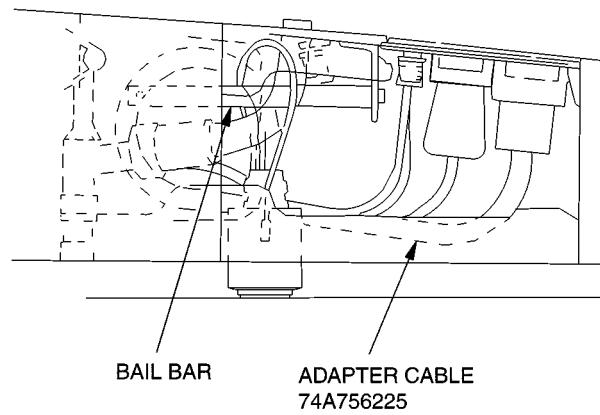


**Figure 3-12. AGM-84 Series Adapter Cable Installation**

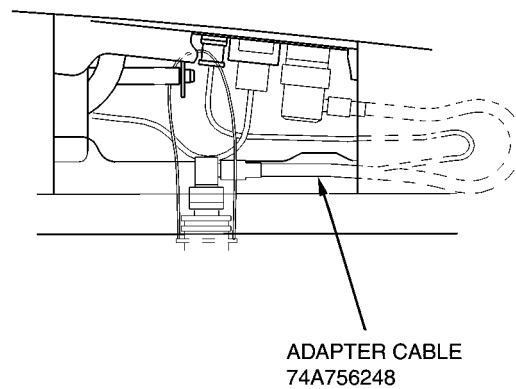


**Figure 3-13. AGM-88 Adapter Cable Installation**

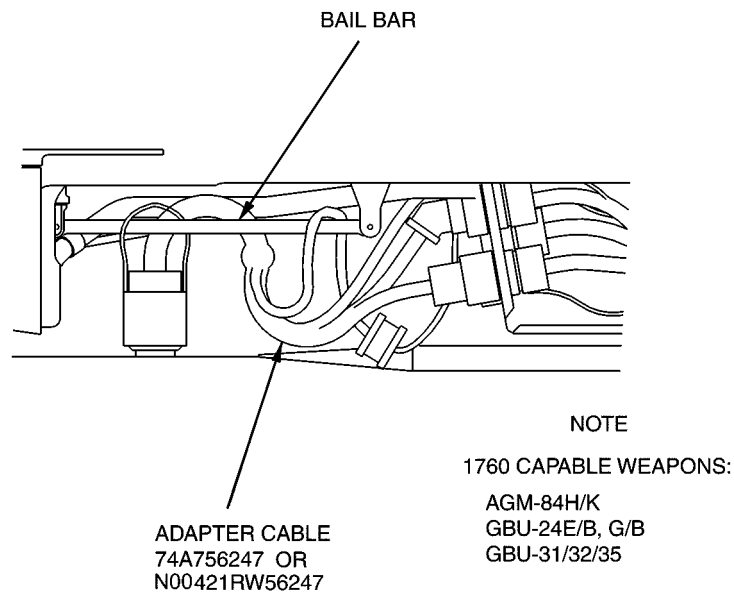




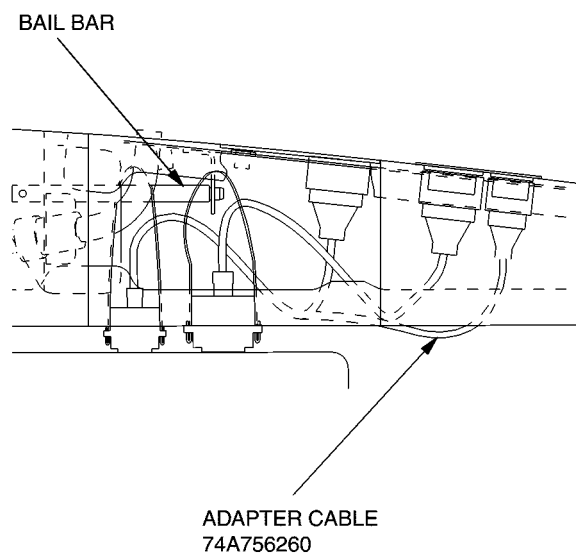
**Figure 3-14. Data Pod Adapter Cable Installation (Typical)**



**Figure 3-15. Data Pod Adapter Cable Installation (Centerline Station)**



**Figure 3-16. 1760 Interface Adapter Cable Installation (Wing Station)**



**Figure 3-17. ARQ-56 (ATARS) Adapter Cable Installation (Station 5 Only)**

2. (Wing Station) Open pylon door 502 to gain access to bail bar and bracket assembly (Figure 3-3).
3. (Centerline) Open pylon access door 510 to gain access to bail bar and connector plate assembly (Figure 3-4).
4. Disconnect and lower bail bar.



Do not route adapter cable over bail bar unless noted in figure.

5. Connect applicable adapter cable bail to bail bar and connect adapter cable (Table 3-1) to correct connector on bracket assembly/connector plate assembly.

6. Connect adapter cable to ASE.
7. Raise and connect the bail bar.
8. Secure access doors and panels.

3-10. **REMOVAL OF ARMAMENT SUSPENSION EQUIPMENT FROM BRU-32 RACK.** Remove MER, BRU-41, BRU-42, BRU-33 or LAU-115 as follows:

1. Position all armament switches in accordance with Table 5-1.
2. Remove CARTRIDGE RETAINERS, auxiliary cartridge cap and remove cartridges from station where ASE is to be removed.
3. Open pylon access door 502 (wing station) or 510 (centerline).
4. Disconnect adapter cable from ASE and pylon bracket/connector plate assembly.
5. Lower bail bar and remove adapter cable bail from bail bar.
6. Raise and reconnect bail bar.
7. Support ASE.
8. Rotate ground safety handle to UNLOCKED (Paragraph 5-6).
9. Rotate MANUAL RELEASE to open suspension hooks (Paragraph 5-7).
10. Lower ASE.
11. Secure access doors and panels.



**SECTION IV**  
**RELEASE AND CONTROL SYSTEM CHECKS**

**4-1. INTRODUCTION.**

4-2. The information and procedures in this section cover functional testing of the armament/missile system in F/A-18 aircraft. Checks must be performed prior to loading weapons/stores to ensure system reliability and that the aircraft is safe to load. Personnel performing the checks described in this section must be thoroughly familiar with the electrical and ground handling safety precautions pertaining to the aircraft. Preferred procedures for both jettison and normal release are presented first, with one or more alternate methods when applicable. These procedures are validated/verified only for software releases 10A, 12A, 91C, 13C, 13C SMUG, 15C and 17C.

4-3. Release and control system checks will not be performed with weapons loaded on the aircraft. Checks may be performed with airborne stores (fuel tanks, empty MERs/VERs, pods, etc.) installed on the aircraft stations provided CARTRIDGE RETAINERS, breech caps, and ejector cartridges are removed. Checks may be performed with live ammunition in the M61 gun assembly provided:

1. Electrical safety switch extended.
2. Manual clearing handle in clear position.
3. Gun electrical connector, disconnected and stowed.
4. Gun breeches are clear of ammunition.

**4-4. Release and Control Checks for Conventional Weapons.**

1. Checks must be performed as noted below:
  - a. Every seven days as configured.
  - b. On accessory suspension equipment including, adapter cables, buffer connectors, shear wafers and motor fire cables within seven days prior to specific weapons or stores loading.
  - c. After basic reconfiguration as defined in Paragraph 3-4.
  - d. After any malfunction whose discovery and correction cannot be verified by aircraft built-in-test (BIT) (i.e., that which corrects a malfunction code indicated on the Aircraft Maintenance Indicator).
2. The complete Fuze Function Control Check must be performed prior to an extended weapons evolution using electrically fuzed bombs. The system continuity portion of the Fuze Function Control Check is required to be performed daily, prior to loading electrically fuzed bombs.
3. Release and Control System Checks need not be performed provided that on the previous mission (within 24 hours) the same type weapon/store to be loaded was successfully dropped/fired and no reconfiguration is required or no weapon system maintenance has been performed since the last mission.
4. Deviations from these procedures may be authorized when necessary and required by Operational Commanders provided the deviation authorized does not detract from or interfere with safety and/or reliability.
5. Indications other than those specified in a check are malfunctions.

**Release and Control System Checks**

**4-5. HOW TO USE THIS SECTION.**

4-6. Procedures for Release and Control System Checks are separated into individual checks for each weapon or system to be checked. Table 4-1 lists each weapon/store or group of weapons/stores and the checks to be performed. Figure 4-1 shows the aircraft firing sequence for multiple carriage of each weapon listed. Prior to performing checks, the required accessory equipment and components must have been properly installed and connected. The aircraft will be prepared in accordance with Aircraft Preparation (Paragraph 4-9). When all checks have been completed Postcheck Procedures (Paragraph 4-43) will be performed.

**4-7. ARMAMENT SUPPORT EQUIPMENT (ASE) SELF TEST.**

4-8. ASE required to perform release and control checks is specified in the appropriate check. Self test procedures for automated test equipment (ATE) are provided as follows:

**NOTE**

The AN/AWM-92 and AN/AWM-96 test set self test procedures are only required to be performed once each 24 hours.

1. AN/AWM-92 Aircraft Weapon Control Test Set Self Test.

- a. Connect AWM-92 test set test cable W1 between test set connectors J1 and J3.
- b. On the test set, position the AC POWER switch to ON. Observe the AC POWER lamp illuminates after 128 steps and the internal self test complete. Observe the following lights/switches are illuminated: KYBD TEST, ACFT TYPE, LAMP TEST, CLEAR, RESET, 0 through 9.
- c. On the test set, position the intensity switch to HIGH.
- d. On the test set, press and release KYBD TEST.
- e. On the test set, press and release each illuminated light/switch as they illuminate. Observe that the lights/switches extinguish when pressed.
- f. On the test set, press and release LAMP TEST. Observe that all the lights/switches illuminate 12 at a time starting with the left section. The STEP/VALUE display illuminates decimal point, plus/minus sign and segments which step through digits 0 through 9.
- g. On the test set, press and release ACFT TYPE. Observe that the RUN and RESET lights/switches illuminate.

**NOTE**

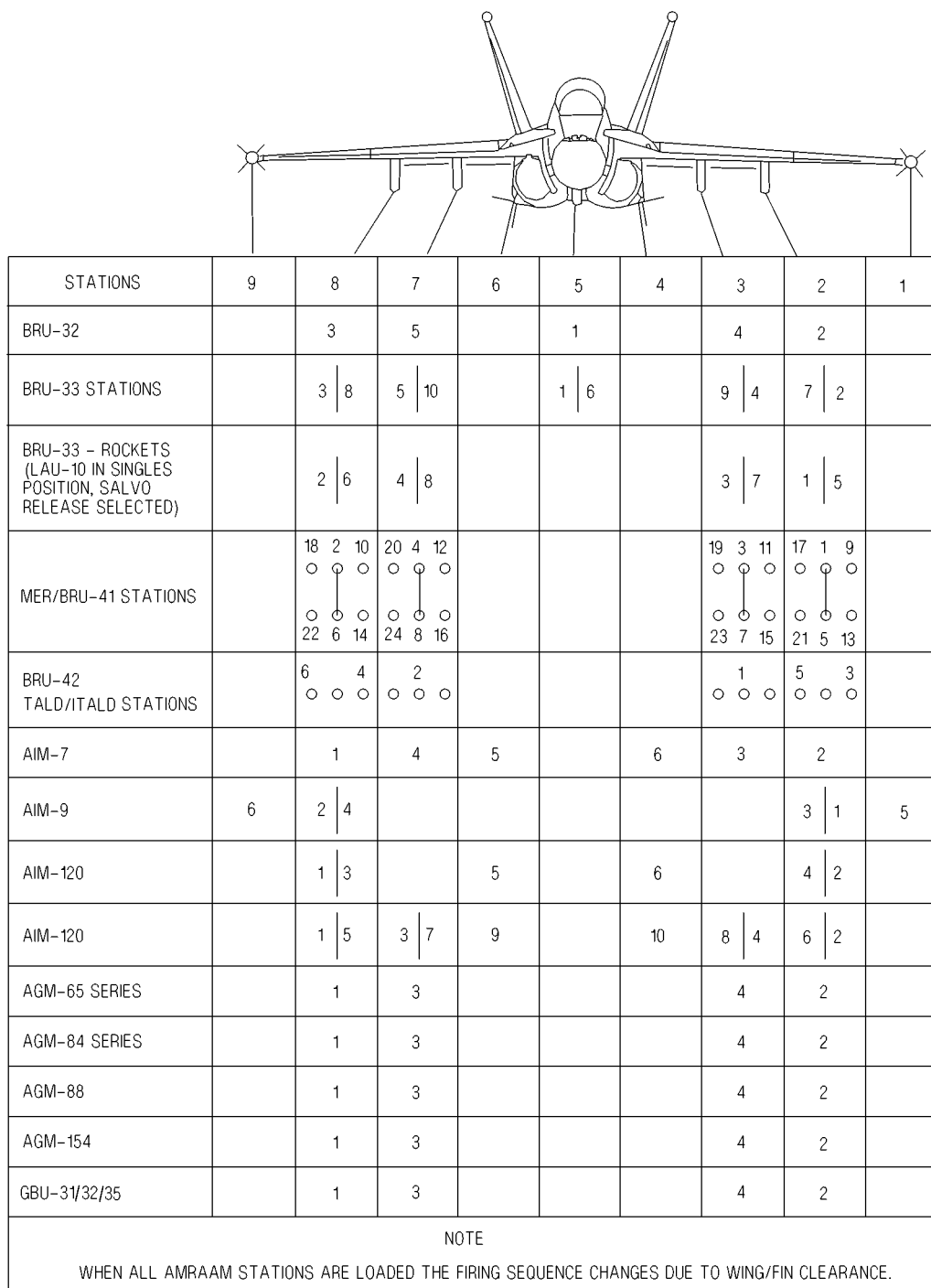
Test set self test runs approximately one minute.

- h. On the test set, press and release RUN. Observe that the test set displays the most current required SEC number for 15 seconds then cycles through self test.

**Table 4-1. Preloading Checks**

<b>WEAPON/STORE</b>	<b>SYSTEM CHECKS</b>
Bombs, MK 77 Fire Bombs, Mines (parent rack)	Jettison System, Parent Rack Release System and Fuze Function Control System (if bombs are to be electrically fuze)
Bombs (VER)	Jettison System, VER Release System and Fuze Function Control System (if bombs are to be electrically fuze)
Practice Bombs/LGTR, LUU-2/-19, MK 58 MLM, (MER/BRU-41)	Jettison System, MER/BRU-41 Release System
TALD/ITALD	BRU-42 Release System Check
Rockets	Jettison System, VER Rocket System
Fuel Tanks/ATARS Data Link Minipod	Jettison System
AIM-7 Missile	AIM-7/AIM-9 System (End-to-End), (pylon stations) Jettison System
AIM-9 Missile	AIM-7/AIM-9 System (End-to-End), (pylon stations) Jettison System
AIM-120 Missile	AIM-120 System
M61 Gun	M61 Gun Firing System
AN/ALE-39	AN/ALE-39 Countermeasures Dispenser System
AN/ALE-47	AN/ALE-47 Countermeasures Dispenser System
AWW-13 (ERDL) Pod	1760 Interface System
AGM-65 Series Missile	Jettison System, AGM-65 System
AGM-84 D/E Missiles	Jettison System, AGM-84 Series System
AGM-84 H/K Missile (SLAM ER)	Parent Rack Release System, 1760 Interface System
AGM-88 Missile	Jettison System, AGM-88 System
AGM-154 (JSOW)	1760 Interface System
GBU-31/32/35 (JDAM)	Parent Rack Release System, Fuze Function Control System, 1760 Interface System

**A1-F18AE-LWS-000**  
**Release and Control System Checks**



**Figure 4-1. Aircraft Firing Sequence**



**NOTE**

TS MALF, CPU FAIL, STEP NO GO, UUT NO GO and RCL FAIL lights/switches indicate test set failure when illuminated.

- i. Observe that the UUT GO and RESET lights/switches are illuminated when the self test is complete.
- j. Position the AWM-92 AC POWER switch to OFF.
- k. Disconnect test cable W1 from the test set.
- l. Continue applicable system check for the weapon to be tested.
2. AN/AWM-96 Aircraft Weapon Control Test Set Self Test.
  - a. Connect W1P1 to test set J1.
  - b. Connect W1P2 to test set J4.
  - c. Place the test set AC switch to ON; POWER lights come on. Allow one minute before proceeding to next step.
  - d. Press and release the RESET button; RESET, LAMP TEST, KYBD TEST, ENTER TYPE, 0 through 9 and CLEAR lights come on.
  - e. Press and release the LAMP TEST button; all button lights cycle left to right by sections, then columns, then rows top to bottom; the display cycles through all digits 0 through 9 and letters A through F.
  - f. Press and release the KYBD TEST button then press and release each keyboard button as it lights; the lights go off as they are pressed.
  - g. Press 9, 9, 9, 9, then press and release the ENTER TYPE button; AUTO, RUN, CHNG MODE lights come on and the STEP VALUE readout shows the date and the revision of test set software.
  - h. Press and release RUN; GO light comes on.
  - i. Place the test set AC switch to OFF; the POWER lights go off.
  - j. Remove W1 cable from the test set.
  - k. Connect W8P1 to test set J3.
  - l. Connect W7P1 to test set J4.
  - m. Connect W8P2 to W7J2 and W8P3 to W7J3.
  - n. Place the test set AC switch to ON; the POWER lights come on.

**Release and Control System Checks**

o. Press and release the RESET button; wait one minute, then press and release 2, 2, 7, 8 and ENTER TYPE buttons; AUTO, RUN, CHNG MODE lights come on.

**NOTE**

With test sets that have serial numbers 100 and subsequent, the STRAY VOLT light will not come on during Step p.

p. Press and release the RUN button; the STRAY VOLT light comes on then goes off 2 times, then the GO light comes on.

q. Place the test set AC switch to OFF; the POWER lights go off.

r. Remove W8 and W7 cables from the test set.

s. Continue with the applicable system check.

**4-9. AIRCRAFT PREPARATION.**

4-10. Prepare the aircraft for the release and control system checks of the armament system by verifying/performing the following procedures.

1. The aircraft electrically grounded.
2. (If applicable) Verify that power is removed from the aircraft.
3. The Gun electrical safety switch is extended, and the manual clearing handle in the clear position.
4. Disconnect and stow the gun interface connector W1P1:
  - a. (F/A-18A-C 161353 thru 164278 and F/A-18C 164627 and up) from 61J-A120.
  - b. (F/A-18D 164279 and up) from 61P-A120.

**WARNING**

Ensure cartridges are removed from all racks and launchers.

5. Remove cartridge retainers, and auxiliary cartridge caps and verify that the cartridges are removed.
6. (F/A-18C/D 163985 and up) Verify the ICM electrical safety switch extended.
7. Ensure the ALE-39 or ALE-47 dispensers are removed.
8. Position all the armament switches in accordance with Table 5-1.
9. Position all other switches to OFF, SAFE or NORMAL.

<b>WARNING</b>
----------------

L AOA PROBE HTR, L PITOT PROBE HTR, TOTAL TEMP SENS P HTR, R AOA P HTR, and R PITOT P HTR circuit breakers must be opened to prevent heating of pitot, AOA probes and total temperature probe.

10. Open L AOA PROBE HTR, L PITOT PROBE HTR, TOTAL TEMP SENS P HTR, R AOA P HTR, and R PITOT P HTR circuit breakers.
11. Weapon Insertion Panel codes set to 00, 00 or to the store installed code.
12. Open suspension hooks on all unloaded stations.
13. Verify suspension hook latched on the fuselage stations.
14. Establish communications.

**NOTE**

The display indications specified in each check are typical and will vary with changes in software and weapon code selections. However the final resultant GO/NO GO at the breech chambers, rocket cables, etc., will be as indicated.

(91C) The weapon inventory count in the wingform will be inside the select box for all weapons.

(13C/13C SMUG/15C and 17C) The weapon inventory count in the wing form will be outside the select box for all weapons. Diamond will precede quantity.

DDIs are selectable and may not be as indicated in the specific check.

**4-11. JETTISON SYSTEM CHECK.**

4-12. The following procedures are used to check the aircraft jettison system.

1. Test Equipment Required.
  - a. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W12/W47 or 74D750020 and W49 or 74D750037 adapters.
  - b. Weight On Wheels (WOW) wedge.
  - c. Proximity switch control.
2. Technical Directives Required.
  - a. None.

**Release and Control System Checks**

3. Check Preparation.

- a. Complete aircraft preparation procedures (Paragraph 4-9).
- b. Set the Weapon Insertion Panel ARMAMENT/STA codes to 24 and the FUZING/N/T code to 16 for stations being checked.
- c. Close the BRU-32 suspension hooks on stations being checked.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- e. Connect electrical power to aircraft.
- f. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- g. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.
- h. Proceed to Jettison System Check (Table 4-2).

**Table 4-2. Jettison System Check**

CHECK STEP	PROCEDURES	RESULT
NOTE		
(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).		
1.	Position WOW wedge under the right main gear proximity switch.	GO on test set when BIT complete.
2.	(AWM-102) Press and release the ON/OFF switch.	
3.	Connect the test set and the W12/W47 or 74D750020 adapter to the forward breech of the station being checked.	
4.	(AWM-54) Position the test set FCTN switch to F/C.	
5.	(AWM-54) Press and hold the test set TEST button.	FC mode on test set.
6.	(AWM-102) Select FC mode.	
NOTE		
Pylon station ground safety handles on stations with hooks closed will remain UNLOCKED until reset procedures have been accomplished.		
7.	Press and release the EMERG JETT, PUSH TO JETT switch.	GO on the test set, ground safety handles on all pylon stations with hooks closed go to UNLOCKED and disconnected.
8.	(AWM-54) Release the test set TEST button.	
9.	(AWM-54) Position the test set FCTN switch to S/V.	
10.	(AWM-54) Press and release the test set TEST button.	
11.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
12.	Transfer the test set to the aft breech on station being checked.	GO on test set.
13.	(AWM-54) Press and release the test set TEST button.	
14.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
15.	(AWM-54) Position the test set FCTN switch to F/C.	FC on test set.
16.	(AWM-54) Press and hold the test set TEST button.	
17.	(AWM-102) Select FC mode.	GO on test set.
18.	Press and release the EMERG JETT, PUSH TO JETT switch.	
19.	(AWM-54) Release the test set TEST button.	
20.	(If applicable) Repeat Steps 16 through 19 for F/A-18B/D rear cockpit.	
21.	Transfer the test set to the forward breech of the next station to be checked.	

## Release and Control System Checks

Table 4-2. Jettison System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
22.	Repeat Steps 5 through 21 for each station to be checked.	
23.	Remove the WOW wedge from under the right main gear proximity switch.	
24.	(AWM-54) Position the test set FCTN switch to S/V.	
25.	(AWM-54) Press and hold the test set TEST button.	
26.	(AWM-102) Select SV mode.	SV on test set.
27.	Press and release the EMERG JETT, PUSH TO JETT switch.	GO on test set.
28.	(AWM-54) Release the test set TEST button.	
29.	(AWM-102) Deselect SV mode.	GO on test set.
30.	Transfer the test set to the forward breech of the next station to be checked.	
31.	Repeat Steps 25 through 30 for the remaining stations to be checked.	
32.	On the GND PWR control panel, position switch 3 to AUTO.	
<div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>CAUTION</b></div> </div> <p style="text-align: center;">Do not press detent button on ground safety handles.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">When rotating the ground safety handles, the handles will not go completely to LOCKED.</p>		
33.	Rotate all BRU-32 ground safety handles on stations with hooks closed towards the LOCKED position.	
34.	On the GND PWR control panel, position switch 3 to B ON for 3 seconds.	
35.	Latch all ZRF arming units (stations to be checked).	
36.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
37.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	MENU display appears on left DDI.
38.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO comes on when BIT is complete, ground safety handles LOCKED.  (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT is complete, ground safety handles LOCKED.

**Table 4-2. Jettison System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
39.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	STORES display appears. SAFE displayed with acronym for weapon code in wingform display for stations being checked.
40.	On the right DDI, press the STORES pushbutton.	
41.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
42.	On the master arm control panel, position the MASTER switch to ARM.	
43.	Connect the test set and 74D750020/W12/W47 to the forward breech of the first station to be checked.	
44.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from display and ARM appears.
45.	On the right DDI, select 82B.	Box appears around weapon select 82B with X through it. 1 82B appears on the wingform display.
46.	On the right DDI, press the PROG pushbutton until PROG-5 appears.	PROG-5 appears on top of program list.
47.	On the right DDI, press the MFUZ pushbutton.	Mechanical fuzing options appear.
48.	On the right DDI, press the N/T pushbutton.	N/T appears next to MFUZ in program list.
49.	On the left vertical control panel, rotate the SELECT JETT switch to RACK LCHR.	Ground safety handles move to UNLOCKED (stations with hooks closed).
50.	On the master arm control panel, select A/G.	A/G light comes on. X is removed from weapon select 82B and RDY is displayed underneath weapon select 82B. Box appears around station being checked 1 82B, in wingform display.
51.	(AWM-54) Position the test set FCTN switch to F/C.	Station light comes on.
52.	On the flaps, landing gear and stores indicator panel, select the JETT STATION SELECT switch for station being checked.	
53.	(AWM-54) Press and hold the test set TEST button.	FC on test set.
54.	(AWM-102) Select FC mode.	
55.	On the left vertical control panel, press and hold the SELECT JETT, JETT switch.	GO on test set.
56.	(AWM-54) Release the test set TEST button.	

## Release and Control System Checks

Table 4-2. Jettison System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
<div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <b>WARNING</b> </div> <p>Do not perform Zero Retention Force (ZRF) arming unit checks on stations with stores (fuel tanks, empty MERs, VERs, etc.) installed.</p>		
57.	Open the bomb rack suspension hooks on the station being checked.	ZRF arming units release.
58.	On the left vertical control panel, release the SELECT JETT, JETT switch.	
59.	(AWM-54) Position the test set FCTN switch to S/V.	
60.	(AWM-54) Press and release the test set TEST button.	GO on test set.
61.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
62.	Transfer the test set to the aft breech of the station to be checked.	
63.	(AWM-54) Press and release the test set test button.	GO on the test set.
64.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
65.	Transfer the test set to the forward breech of the next station to be checked.	
66.	Repeat Steps 55 through 65 for each station to be checked.	
67.	Connect the test set and 74D750037/W49 adapter to the auxiliary breech (station being checked).	
68.	Close the suspension hooks on all stations being checked.	
69.	On the master arm control panel, deselect A/G.	A/G light goes off.
70.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
71.	On the master arm control panel, select then deselect A/G.	A/G light comes on and then goes off.
72.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
73.	On the master arm control panel select A/G.	A/G light comes on.
<p style="text-align: center;"><b>NOTE</b></p> <p>H+ULK must be displayed under weapon acronym in the wingform display for the station being checked before auxiliary jettison can be performed.</p>		
74.	On the left vertical control panel, press and release the SELECT JETT, JETT switch.	H+ULK is displayed for all stations being checked.
75.	On the ECM control panel assembly, position the AUX REL switch to ENABLE.	



**Table 4-2. Jettison System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
76.	(AWM-54) Position the test set FCTN switch to F/C.	FC on test set. GO on test set.
77.	(AWM-54) Press and hold the test set TEST button.	
78.	(AWM-102) Select FC mode.	
79.	On the left vertical control panel, press and release the SELECT JETT, JETT switch.	
80.	(AWM-54) Release the test set TEST button.	GO on test set. SV, then GO on test set.
81.	(AWM-54) Position the test set FCTN switch to S/V.	
82.	(AWM-54) Press and release the test set TEST button.	
83.	(AWM-102) Select, then deselect SV mode.	
84.	Transfer the test set to the auxiliary breech of the next station to be checked.	All station lights go off.
85.	Repeat Steps 76 through 84 for the remaining stations to be checked.	
86.	On the ECM control panel assembly, position the AUX REL switch to NORM.	
87.	On the flaps, landing gear and stores indicator panel, deselect the JETT STATION SELECT switches for the stations being checked.	
88.	On the left vertical control panel, rotate the SELECT JETT switch to SAFE.	82B has box removed. ARM is removed from the display and SAFE appears. A/G light goes off.
89.	On the right DDI, deselect 82B.	
90.	On the master arm control panel, position the MASTER switch to SAFE.	
91.	On the master arm control panel, deselect A/G.	
92.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	The ground safety handles rotate to LOCKED on stations with hooks closed. Indicator display areas off.
93.	Position the left and right DDI power switches to OFF.	
94.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
95.	Disconnect/remove the test equipment from the aircraft.	
96.	(AWM-102) Press and release ON/OFF.	Test set display off.
97.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**Release and Control System Checks**

**4-13. PARENT RACK RELEASE SYSTEM CHECK.**

4-14. The following procedures are used to check the aircraft armament system for release of a single weapon/store loaded on the parent (BRU-32) rack.

1. Test Equipment Required.

a. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W12/W47 or 74D750020 adapter.

b. Proximity switch control.

2. Technical Directives Required.

a. None.

3. Check Preparation.

a. Complete aircraft preparation procedures (Paragraph 4-9).

b. Set the Weapons Insertion Panel ARMAMENT/STA codes to 24 and FUZING/N/T to 16 for the stations being checked.

c. Close the BRU-32 suspension hooks on stations being checked.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.

e. Connect electrical power to aircraft.

f. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

g. On the GND PWR control panel position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.

h. Proceed to Parent Rack Release System Check (Table 4-3).

**Table 4-3. Parent Rack Release System Check**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	Menu display appear.
3.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete.  (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
4.	Latch ZRF arming units (stations to be checked).	
5.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
6.	On the master arm control panel, select A/G.	A/G light comes on and all of the rack ground safety handles rotate to UNLOCKED on stations with hooks closed.
7.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	Menu display appears.
8.	On the right DDI, press the STORES pushbutton.	Weapons display appears on the right DDI, 1 82B appears in the wingform and SAFE is on.
9.	On the right DDI, select 82B.	Box appears around weapon select 82B with X through it and a box appears around station being checked 1 82B in wingform displayed.
10.	On the right DDI, press the PROG pushbutton until PROG-5 appears.	PROG-5 appears on top of the program list.
11.	On the right DDI, press the UFC pushbutton.	
12.	On the UFC, press the QTY option pushbutton.	
13.	On the UFC, press 1 then the ENT pushbuttons.	QTY 1 appears in the program list.
14.	On the right DDI, press the MFUZ pushbutton.	The mechanical fuzing options appear.
15.	On the right DDI, press the N/T pushbutton.	N/T option appears next to MFUZ in the program list.
16.	On the master arm control panel, position the MASTER switch to ARM.	
17.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from the display and ARM appears. The X is removed from weapon select 82B and RDY is displayed underneath the weapon select 82B.

## Release and Control System Checks

Table 4-3. Parent Rack Release System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p>(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).</p>		
18.	(AWM-102) Press and release ON/OFF switch.	GO on test set when BIT complete.
19.	Connect the test set and W12/W47 or 74D750020 adapter to either breech of the station to be checked.	
20.	(AWM-54) Position the test set FCTN switch to F/C.	
21.	(AWM-54) Press and hold the test set TEST button.	
22.	(AWM-102) Select FC mode.	FC on test set.
23.	Press and hold the bomb button.	GO on test set.
24.	Open the bomb rack suspension hooks.	The ZRF arming units remain latched.
25.	(AWM-54) Release the test set TEST button.	
26.	Release the bomb button.	Box appears around the next station in the firing sequence, 1 82B in wingform display.
27.	(AWM-54) Position the test set FCTN switch to S/V.	
28.	(AWM-54) Press and release the test set TEST button.	GO on test set.
29.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
30.	Disconnect the test set and transfer it to the next station to be checked.	
31.	Repeat Steps 20 through 30 for the remaining stations to be checked.	
32.	On the right DDI, deselect 82B.	82B has box removed.
33.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
34.	On the master arm control panel, deselect A/G.	A/G light goes off.
35.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
36.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
37.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
38.	Disconnect/remove the test equipment from the aircraft.	
39.	(AWM-102) Press and release ON/OFF switch.	Test set display off.
40.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

#### **4-15. VER RELEASE SYSTEM CHECK.**

4-16. The following procedures are used to check the aircraft armament system for release of weapons loaded on the VER.

1. Test Equipment Required.
  - a. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W12/W47 or 74D750020 adapter.
  - b. Proximity switch control.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. Set the Weapons Insertion Panel ARMAMENT/STA codes to 24 and FUZING/N/T code to 16 for the stations being checked.
  - c. Close the BRU-33 suspension hooks on stations being checked.

<b>WARNING</b>
----------------

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- e. Connect electrical power to aircraft.
- f. (If applicable) Apply cooling.

<b>WARNING</b>
----------------

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- g. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.
- h. Proceed to VER Release System Check (Table 4-4).

## Release and Control System Checks

Table 4-4. VER Release System Check

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	The menu display appears.
3.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete. (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
4.	Latch ZRF arming units (stations to be checked).	
5.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
6.	On the master arm control panel, select A/G.	A/G light comes on and the VER ground safety handles rotate to UNLOCKED (stations being checked).
7.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	The menu display appears.
8.	On the right DDI, press the STORES pushbutton.	The weapons display appears on the right DDI with 02 82B in wingform (stations being checked). SAFE is on.
9.	On the right DDI, select 82B.	Box appears around the weapon select 82B with X through it and box appears around the station being checked 02 82B in the wingform display.
10.	On the right DDI, press the PROG pushbutton until PROG-5 appears.	PROG-5 appears on top of the program list.
11.	On the right DDI, press the UFC pushbutton.	
12.	On the UFC, press the QTY option pushbutton.	
13.	On the UFC, press 1 then the ENT pushbutton.	QTY 1 appears in the program list.
14.	On the right DDI, press the MFUZ pushbutton.	The mechanical fuzing options appear.
15.	On the right DDI, press the N/T pushbutton.	N/T appears next to MFUZ in the program list.
16.	On the master arm control panel, position the MASTER switch to ARM.	
17.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from display and ARM appears. X is removed from weapon select 82B and RDY appears.
<p style="text-align: center;"><b>NOTE</b></p> <p>(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).</p>		

**Table 4-4. VER Release System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
18.	(AWM-102) Press and release ON/OFF switch.	GO on test set when BIT complete.
19.	Connect the test set and W12/W47 or 74D750020 adapter to the forward breech of the station to be checked.	
20.	(AWM-54) Position the test set FCTN switch to F/C.	
21.	(AWM-54) Press and hold the test set TEST button.	
22.	(AWM-102) Select FC mode.	FC on test set.
23.	Press and hold the bomb button.	GO on test set.
24.	Open the bomb rack suspension hooks on the BRU-33 rack being checked.	ZRF arming units remain latched.
25.	(AWM-54) Release the test set TEST button.	Box appears around the next station in the firing sequence. ⬠ 82B in the wingform display. ZRF arming units unlatch; when the second bomb is released from the VER.
26.	Release the bomb button.	
27.	(AWM-54) Position the test set FCTN switch to S/V.	
28.	(AWM-54) Press and release the test set TEST button.	
29.	(AWM-102) Select, then deselect SV mode.	SV then GO on test set.
30.	Disconnect/transfer the test set and adapter to the next BRU-33 station to be checked.	A/G light goes off.
31.	Repeat Steps 20 through 30 for the remaining stations to be checked.	
32.	Close the bomb rack suspension hooks on all BRU-33 bomb racks.	
33.	On the master arm control panel, deselect A/G.	
34.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	A/G light comes on then goes off.
35.	Latch ZRF arming units.	
36.	On the master arm control panel, select then deselect A/G.	
37.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
38.	On the master arm control panel, select A/G.	A/G light comes on.
39.	On the left vertical control panel, rotate the SELECT JETT switch to STORES.	Station light comes on.
40.	Connect the test set and W12/W47 or 74D750020 adapter to the aft breech of the station being checked.	
41.	On the flaps, landing gear and stores indicator panel, select the JETT STATION SELECT switch for the station being checked.	

## Release and Control System Checks

Table 4-4. VER Release System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
42.	(AWM-54) Position the test set FCTN switch to F/C.	FC on test set.
43.	(AWM-54) Press and hold the test set TEST button.	
44.	(AWM-102) Select FC mode.	GO on test set.
45.	On the left vertical control panel, press and hold the SELECT JETT, JETT switch.	ZRF arming units release.
46.	(AWM-54) Release the test set TEST button.	
47.	Open the bomb rack suspension hooks on the BRU-33 rack being checked.	
48.	Release the SELECT JETT, JETT switch.	
49.	(AWM-54) Position the test set FCTN switch to S/V.	GO on test set.
50.	(AWM-54) Press and release the test set TEST button.	
51.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
52.	Transfer the test set to the aft breech of the remaining BRU-33 on the aircraft station being checked.	Selected station lights off.
53.	Repeat Steps 42 through 50.	
54.	Transfer the test set to the aft breech of the next station to be checked in the firing sequence.	
55.	Repeat Steps 41 through 54 for the remaining stations to be checked.	
56.	On the flaps, landing gear and stores indicator panel deselect the JETT STATION SELECT switch for all selected stations.	82B has box removed.
57.	On the left vertical control panel, rotate the SELECT JETT switch to SAFE.	
58.	On the right DDI, deselect 82B.	ARM is removed from display and SAFE appears.
59.	On the master arm control panel, position the MASTER switch to SAFE.	
60.	On the master arm control panel, deselect A/G.	A/G light goes off.
61.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	Ground safety handles rotate to LOCKED on stations with hooks closed.
62.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
63.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
64.	Disconnect/remove the test equipment from the aircraft.	Test set display off.
65.	(AWM-102) Press and release ON/OFF switch.	
66.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	



#### **4-17. VER ROCKET FIRING CHECK.**

4-18. The following procedures are used to check the aircraft armament system for firing of rockets loaded on the VER.

1. Test Equipment Required.
  - a. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W2 adapter and W12/W47 or 74D750020 adapter.
  - b. Proximity switch control.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. Set the Weapons Insertion Panel ARMAMENT/STA codes to 77 and the N/T code to 00 for the stations being checked.
  - c. Close the BRU-33 suspension hooks on stations being checked.

<b>WARNING</b>
----------------

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- e. Connect electrical power to aircraft.
- f. (If applicable) Apply cooling.

<b>WARNING</b>
----------------

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- g. On the GND PWR control panel position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.
- h. Proceed to VER Rocket Firing Check (Table 4-5).

## Release and Control System Checks

Table 4-5. VER Rocket Firing Check

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	The menu display appears.
3.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete. (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
4.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
5.	On the master arm control panel, select A/G.	A/G light comes on.
6.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	Menu display appears.
7.	On the right DDI, press the STORES pushbutton.	Weapons display appears on the right DDI with Ø8 10 R in wingform (stations being checked). SAFE is on.
<p style="text-align: center;"><b>NOTE</b></p> <p>(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).</p>		
8.	(AWM-102) Press and release ON/OFF switch.	GO on test set when BIT complete.
9.	Connect the test set and W2 adapter to the rocket cable of the first station in the firing sequence.	
10.	On the right DDI, select 10R.	Box appears around weapon select 10R with X through it. A box appears around Ø8 10R in wingform display (first station in firing sequence).
11.	On the right DDI, press the MAN pushbutton.	Box appears around MAN.
12.	On the right DDI, press the SGL pushbutton.	Box appears around SGL.
13.	On the master arm control panel, position the MASTER switch to ARM.	
14.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from display and ARM appears. X is removed from weapon select 10R and RDY appears.
15.	(AWM-54) Position the test set FCTN switch to F/C.	
16.	(AWM-54) Press and hold the test set TEST button.	
17.	(AWM-102) Select FC mode.	FC on test set.

**Table 4-5. VER Rocket Firing Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
18.	Press and release the bomb button.	GO on test set, number of rockets displayed for station being checked decreases by four.
19.	(AWM-54) Release the test set TEST button.	
20.	(AWM-54) Position the test set FCTN switch to S/V.	
21.	(AWM-54) Press and release the test set TEST button.	
22.	(AWM-102) Select, then deselect SV mode.	GO on test set.
23.	Transfer the test set to the next priority station rocket cable to be checked.	SV, then GO on test set.
24.	Repeat steps 15 through 23 for the remaining stations to be checked.	
25.	Connect the test set and W12/W47 or 74D750020 to the forward breech of the first BRU-33 to be checked.	
26.	On the left vertical control panel, rotate the SELECT JETT switch to STORES.	The ground safety handles rotate to UNLOCKED on stations with hooks closed.
27.	On the flaps, landing gear and stores indicator panel, select the JETT STATION SELECT switch for the station being checked.	The selected station light comes on.
28.	(AWM-54) Position the test set FCTN switch to F/C.	
29.	(AWM-54) Press and hold the test set TEST button.	
30.	(AWM-102) Select FC mode.	FC on test set.
31.	On the left vertical control panel, press and release the SELECT JETT, JETT switch.	GO on test set. (10A and 12A) H+ULK is displayed under station being checked weapon acronym.
32.	(AWM-54) Release the test set TEST button.	
33.	(AWM-54) Position the test set FCTN switch to S/V.	
34.	(AWM-54) Press and release the test set TEST button.	GO on test set.
35.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
36.	Transfer the test set to the remaining BRU-33 on the station being checked.	
37.	Repeat steps 28 through 36 for the remaining BRU-33 on station being checked.	
38.	Transfer the test set to the fwd breech of the BRU-33 on the next aircraft station to be checked.	
39.	Repeat steps 27 through 38 for each aircraft station to be checked.	
40.	On the flaps, landing gear and stores indicator panel, deselect the JETT STATION SELECT switches for all stations selected.	Selected station lights go off.
41.	On the left vertical control panel, rotate the SELECT JETT switch to SAFE.	

## Release and Control System Checks

Table 4-5. VER Rocket Firing Check (Continued)

CHECK STEP	PROCEDURES	RESULT
42.	On the right DDI deselect 10R.	10R has box removed.
43.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display, SAFE appears.
44.	On the master arm control panel, deselect A/G.	A/G light off.
45.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	Ground safety handles rotate to LOCKED on stations with hooks closed.
46.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
47.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
48.	Disconnect/remove the test equipment from the aircraft.	
49.	(AWM-102) Press and release ON/OFF switch.	Test set display off.
50.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**4-19. MER/BRU-41 RELEASE SYSTEM CHECK.**

4-20. The following procedures are used to check the aircraft armament system for release of weapons loaded on the MER/BRU-41.

1. Test Equipment Required.
  - a. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W3 adapter.
  - b. Proximity switch control.
  - c. (Arming solenoids) Arming wire assemblies.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. Close the forward and aft suspension hooks of each MER/BRU-41 ejector unit.
  - c. Set the Weapons Insertion Panel ARMAMENT/STA code to 29 for the stations being checked.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- e. Connect electrical power to aircraft.
- f. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- g. On the GND PWR control panel position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.
- h. Proceed to MER/BRU-41 Release System Check (Table 4-6).

**Table 4-6. MER/BRU-41 Release System Check**

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	The menu display appears.
3.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete.  (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
<b>NOTE</b>  If LUU-2/-19 flares are to be loaded, perform Step 4, if practice bombs are to be loaded, proceed to Step 5.		
4.	(If applicable) Install arming wire/latch ZRF on tail arming units on all MER/BRU-41 racks on the station to be checked.	
5.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
6.	On the master arm control panel, select A/G.	A/G light comes on.

## Release and Control System Checks

Table 4-6. MER/BRU-41 Release System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
7.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	The menu display appears.
8.	On the right DDI, press the STORES pushbutton.	Weapons display appears on the right DDI with 06 82XT in wingform, SAFE is on.
9.	On the right DDI, select 82XT.	Box appears around the weapon select 82XT with X through it, and box appears around station being checked 06 82XT in the wingform display.
10.	On the right DDI, press the PROG pushbutton until PROG-5 appears.	PROG-5 appears on top of the program list.
11.	On the right DDI, press the UFC pushbutton.	
12.	On the UFC, press the QTY option pushbutton.	
13.	On the UFC, press 1 then the ENT pushbutton.	QTY 1 appears in the program list.
14.	On the right DDI, press the DRAG pushbutton.	FF/RET options appear on the DDI.
15.	On the right DDI, press the RET pushbutton.	DRAG RET displayed on the DDI.
16.	On the master arm control panel, position the MASTER switch to ARM.	
17.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from display and ARM appears, X is removed from the weapon select 82XT and RDY appears.
18.	(MER) Press and release the HOMING switch on the MER being checked.	The MER HOMING light comes on and the MER homes to station 1.
19.	(If applicable) Remove the MER electrical safety pin.	

**NOTE**

(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).

20.	(AWM-102) Press and release ON/OFF switch.	GO on test set when BIT complete.
21.	Connect the test set and W3 adapter to station one of the first MER/BRU-41 in the firing sequence.	

**NOTE**

Quantity indicated in the wingform will decrease by one each time the bomb button is pressed and the suspension hooks are opened.

22.	(AWM-54) Position the test set FCTN switch to F/C.	
23.	(AWM-54) Press and hold the test set TEST button.	
24.	(AWM-102) Select FC mode.	FC on test set.
25.	Press and hold the bomb button.	GO on test set.

**Table 4-6. MER/BRU-41 Release System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
26.	(AWM-54) Release the test set TEST button.	(If applicable) Arming wire assemblies are retained; aft ZRF remains latched.  A box appears around (quantity remaining) 82XT in the wingform.
27.	Open the rack suspension hooks on the MER/BRU-41 station being checked. (If applicable) Tug the arming wire assemblies sharply.	
28.	Release the bomb button.	
29.	(If applicable) On the right DDI, press the STEP pushbutton until the aircraft station being checked is reselected.	
30.	Connect the test set to the next MER/BRU-41 station to be checked.	
31.	Repeat Steps 23 through 30 for the remaining MER/BRU-41 stations to be checked.	
32.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
33.	Close the rack suspension hooks on MER/BRU-41 station 6.	
34.	On the master arm control panel, deselect A/G.	
35.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
36.	On the master arm control panel, select A/G.	A/G light comes on. Box appears around 6 82XT displayed in wing form.
37.	On the left vertical control panel, position the SELECT JETT switch to STORES.	The selected station light comes on.
38.	On the flaps, landing gear and stores indicator panel, select the JETT STATION SELECT switch for the aircraft station being checked.	
NOTE BRU-41 proceed to Step 48.		
39.	(MER) (AWM-54) Place the test set FCTN switch to S/V.	SV on test set.  (AWM-54) GO on test set.
40.	(MER) Install the MER electrical safety pin.	
41.	(MER) (AWM-54) Press and hold the test set TEST button.	
42.	(AWM-102) Select SV mode.	
43.	(MER) On the left vertical control panel, press and release the SELECT JETT, JETT switch.	
44.	(MER) (AWM-54) Release the test set TEST button.	

## Release and Control System Checks

Table 4-6. MER/BRU-41 Release System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
45.	(AWM-102) Deselect SV mode.	GO on test set.
46.	(MER) (AWM-54) Place the test set FCTN switch to F/C.	
47.	(MER) Remove MER electrical safety pin.	
48.	(AWM-102) Select FC mode.	FC mode on test set.
49.	(AWM-54) Press and hold the test set TEST button.	
50.	On the left vertical control panel, press and hold the SELECT JETT, JETT switch.	GO on test set.
51.	Open the rack suspension hooks on the MER/BRU-41 station being checked. (If applicable) Tug the arming wire assemblies sharply.	(If applicable) Arming wire assemblies are released; aft ZRF arming unit release.
52.	(AWM-54) Release the test set TEST button.	
53.	Release the SELECT JETT, JETT switch.	
54.	(AWM-54) Position the test set FCTN switch to S/V.	
55.	(AWM-54) Press and release the test set TEST button.	GO on test set.
56.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
57.	On the flaps, landing gear and stores indicator panel, deselect the JETT STATION SELECT switch for the aircraft station being checked.	Station light goes off.
58.	On the left vertical control panel, rotate the SELECT JETT switch to SAFE.	
59.	Transfer the test set to station one of the MER/BRU-41 on the next aircraft station in firing sequence.	
60.	(If applicable) Install arming wire assemblies in the tail arming solenoids. Latch aft ZRF arming units (all MER/BRU-41 stations to be checked).	
61.	Repeat Steps 18 through 60 for the remaining aircraft stations to be checked.	
62.	Deselect 82XT.	82XT has box removed.
63.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
64.	On the master arm control panel, deselect A/G.	A/G light goes off.
65.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
66.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
67.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
68.	Disconnect/remove test equipment from aircraft.	
69.	(AWM-102) Press and release ON/OFF switch.	Test set display off.
70.	Close the MER/BRU-41 suspension hooks.	
71.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	



#### **4-21. TALD/ITALD BRU-42 RELEASE SYSTEM CHECK.**

4-22. The following procedures are used to check the aircraft armament system for release of TALD/ITALD weapons loaded on a BRU-42.

1. Test Equipment Required.
  - a. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W-3 adapter.
  - b. Proximity switch control.
  - c. TALD launch cable test adapter (3038AS120).
  - d. TTU-504/E launch adapter test plug.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. Set the Weapons Insertion Panel ARMAMENT/STA codes for stations being checked as follows:
    - (1) (10A and 12A) Set to 25.
    - (2) (91C/13C/15C and 17C) Set to 29.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- c. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- d. Close suspension hooks on each BRU-42 station to be checked.
- e. Install TALD launch cable on each BRU-42 station to be checked.
- f. Connect electrical power to aircraft.
- g. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- h. On the GND PWR control panel position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.
- i. Proceed to TALD/ITALD BRU-42 Release System Check (Table 4-7).

## Release and Control System Checks

Table 4-7. TALD/ITALD BRU-42 Release System Check

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	The menu display appears.
3.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete. (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
<p style="text-align: center;"><b>NOTE</b></p> <p>If ITALD is to be loaded, perform step 4. If TALD is to be loaded proceed to step 5.</p>		
4.	(ITALD) Latch aft ZRF arming units on all BRU-42 stations to be checked.	
5.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to up.	
6.	On the master arm control panel, select A/G.	A/G light comes on.
7.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	The menu display appears.
8.	On the right DDI, press the STORES pushbutton.	Weapons display appears on the right DDI with 03 82P/ 03 82XT in the wingform. SAFE is on.
9.	On the right DDI, select 82P/82XT.	Box appears around the weapon select 82P/82XT with X through it, and box appears around station being checked 03 82P/ 03 82XT in wingform display.
10.	On the right DDI, press PROG until PROG-5 appears.	PROG-5 appears on top of the program list.
11.	On the right DDI, press the UFC pushbutton.	
12.	On the UFC, press the QTY option pushbutton.	
13.	On the UFC, press 1 then the ENT pushbutton.	QTY 1 appears in the program list.
14.	On the master arm control panel, position the MASTER switch to ARM.	
15.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from the display and ARM appears, X is removed from the weapon select 82P/82XT and RDY appears.
<p style="text-align: center;"><b>NOTE</b></p> <p>(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).</p>		
16.	(AWM-102) Press and release ON/OFF switch.	GO on test set when BIT complete.

**Table 4-7. TALD/ITALD BRU-42 Release System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
17.	Connect the test set and W3 adapter to station one of the first BRU-42 in firing sequence.	
18.	Connect the TTU-504/E TALD launch adapter test plug, to the station being checked.	
<p><b>NOTE</b></p> <p>Quantity indicated in the wingform will decrease by one each time the bomb button is pressed and the suspension hooks are opened.</p>		
19.	(AWM-54) Position the test set FCTN switch to F/C.	
20.	(AWM-54) Press and hold the test set TEST button.	
21.	(AWM-102) Select FC mode.	FC on test set.
22.	Press and hold the bomb button.	GO on test set.
23.	(AWM-54) Release the test set TEST button.	
24.	Open suspension hooks on the BRU-42 station being checked.	(ITALD) Aft ZRF remains latched.
25.	Release the bomb button.	
26.	(If applicable) On the right DDI, press the STEP pushbutton until the station being checked is reselected.	A box appears around 02 82P/ 02 82XT in wingform.
27.	Transfer the test set and launch test adapter to the next BRU-42 station in firing sequence.	
<p><b>NOTE</b></p> <p>After the last release for the station(s) being checked, an X will appear through the weapon select 82P/82XT, RDY will be removed and stations will have 082P/082XT in the wingform.</p>		
28.	Repeat steps 19 through 27 for each BRU-42 station in sequence.	
<p><b>NOTE</b></p> <p>Leave the test set connected to last BRU-42 station checked.</p>		
29.	Close the hooks on station 3 of the BRU-42 being checked.	
30.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
31.	On the master arm control panel, deselect A/G.	A/G light goes off.
32.	On the master arm control panel, select A/G.	A/G light comes on, 03 82P/03 82XT appears in the wingform for station being checked.
33.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	

## Release and Control System Checks

Table 4-7. TALD/ITALD BRU-42 Release System Check (Continued)

CHECK STEP	PROCEDURES	RESULT	
34.	On the left vertical control panel, position the SELECT JETT switch to STORES.	The selected station light comes on.	
35.	On the flaps, landing gear and stores indicator panel, select the JETT STATION SELECT switch for the station being checked.		
36.	(AWM-54) Press and hold the test set TEST button.		
37.	(AWM-102) Select FC mode.		FC on test set.
38.	On the left vertical control panel, press and release the SELECT JETT, JETT switch.		GO on the test set. (ITALD) Aft ZRF arming unit releases.
39.	(AWM-54) Release the test set TEST button.		
40.	(AWM-54) Position the test set FCTN switch to S/V.		
41.	(AWM-54) Press and release the test set TEST button.		GO on test set.
42.	(AWM-102) Select, then deselect SV mode.		SV, then GO on test set.
43.	On the flaps, landing gear and stores indicator panel, deselect the JETT STATION SELECT switch for the station being checked.		The selected station light goes off.
44.	On the left vertical control panel, rotate the SELECT JETT switch to SAFE.		
<div>NOTE</div> <div>If no other stations are to be checked, proceed to step 48.</div>			
45.	Transfer the test set and test adapter to the BRU-42 station 1, on the next station in the firing sequence.	82P/82XT has box removed and RDY is removed.	
46.	(ITALD) Latch aft ZRF arming units for all BRU-42 racks to be checked.		
47.	Repeat steps 19 through 46 for each station to be checked.		
48.	On the right DDI, deselect 82P/82XT.		
49.	On the master arm control panel, position the MASTER switch to SAFE.		ARM is removed from display and SAFE appears.
50.	On the master arm control panel, deselect A/G.		A/G light goes off.
51.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.		Ground safety handles rotate to the LOCKED position on station being checked.
52.	Position the left and right DDI power switches to OFF.		Indicator display areas off.
53.	On the GND PWR control panel, position the EXT PWR switch to off.		
54.	Disconnect/remove the test equipment from the aircraft.		
55.	(AWM-102) Press and release ON/OFF switch.	Test set display off.	
56.	If no other checks are to be performed proceed to postcheck procedures (Paragraph 4-43).		

**4-23. FUZE FUNCTION CONTROL SYSTEM CHECK.**

4-24. The following procedures are used to check the aircraft fuze function control system at parent rack or VER.

1. Test Equipment Required.
  - a. AN/AWM-42A Fuze Function Control Test Set.
  - b. Proximity switch control.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. Set the Weapons Insertion Panel ARMAMENT/STA codes to 25 and FUZING/N/T codes to 31 for the stations being checked (Paragraph 5-21).

**NOTE**

Only the continuity portion of the Fuze Function Control System Check is required to be performed prior to loading. The continuity check must be performed on all parent bomb racks without stores (tanks, VER's, MER, etc.) installed and on all VER stations.

- c. Close the BRU-32/33 suspension hooks on stations being checked.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
  - e. Connect electrical power to aircraft.
  - f. (If applicable) Apply cooling.
  - g. Proceed to Fuze Function Control System Check (Table 4-8).

## Release and Control System Checks

Table 4-8. Fuze Function Control System Check

CHECK STEP	PROCEDURES	RESULT
1.	Connect the AWM-42 to the electrical fuzing receptacle on the first station to be checked (forward fuzing receptacle on BRU-33).	The VOLT-OHM METER indication is in the center of the green area. OHMS, OFF, CAL switch in the OFF position. The VOLT-OHM METER indicates infinity. The VOLT-OHM METER is in the green area. OHMS, OFF, CAL switch in the OFF position.
2.	Position the test set FUNCTION SWITCH to OHMS.	
3.	Hold the test set OHMS, OFF, CAL switch to CAL and adjust CAL ADJ.	
4.	Release the test set OHMS, OFF, CAL switch.	
5.	Hold the test set OHMS, OFF, CAL switch to OHMS.	
6.	Open the bomb rack suspension hooks.	
7.	Release the test set OHMS, OFF, CAL switch.	
8.	Disconnect and transfer the test set to next station to be checked.	
9.	Repeat Steps 5 through 8 for each station to be checked.	
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If the high voltage check is to be performed proceed to Step 11.</p>		
10.	If no other checks are to be performed, proceed to the postcheck procedures (Paragraph 4-43).	
11.	Connect the test set to any wing station/BRU-33 electrical fuzing receptacle.	
12.	Close the bomb rack suspension hooks on stations being checked.	
<div><div>WARNING</div><p>Prior to applying power, the cockpit switches and controls must be ready to receive power.</p></div>		
13.	On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.	After warm-up, indicator display areas appear. The menu display appears.  (10A AND 12A) BIT display appears. SMS GO displayed when BIT complete. (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
14.	Position the left and right DDI power switches to DAY.	
15.	On the left DDI, press and release MENU pushbutton until the BIT pushbutton option is displayed.	
16.	On the left DDI, press the BIT pushbutton.	
17.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
18.	On the master arm control panel, select A/G.	
A/G light comes on. Ground safety handles rotate to the UNLOCKED on stations with hooks closed.		

**Table 4-8. Fuze Function Control System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
19.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	The menu display appears.
20.	On the right DDI, press the STORES pushbutton.	Weapons display appears on the right DDI with 82P in wingform, SAFE is on.
21.	On the right DDI, select 82P.	Box appears around the weapon select 82P with X through it.
22.	On the right DDI, press and release the PROG pushbutton until PROG-5 appears.	PROG-5 appears on top of the program list.
23.	On the right DDI, press the UFC pushbutton.	
24.	On the UFC, press the QTY pushbutton, then press 1 then the ENT pushbutton.	QTY 1 appears in the program list.
25.	On the right DDI, press the EFUZ pushbutton.	The electrical fuzing options appear.
26.	On the right DDI, press the VT pushbutton.	VT appears next to EFUZ in the program list.
27.	On the master arm control panel, position the MASTER switch to ARM.	
28.	Position the test set FUNCTION SWITCH to VT +300.	
29.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from the display and ARM appears, X is removed from the weapon select 82P and RDY appears. Box appears around 82P in wingform.
<div style="border: 2px solid black; padding: 5px; display: inline-block; margin: 10px 0;"><b>WARNING</b></div> <p>High dc voltages are present during all voltage checks.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>To obtain the correct indication, the bomb button must be pressed and held until test set meter indication is confirmed, then released.</p>		
30.	Press and release the bomb button.	Test set VOLT-OHM METER indicates in the green area.
<p style="text-align: center;"><b>NOTE</b></p> <p>If less than four stations are being checked, perform the reset procedures (Steps 31 through 36) when H+ULK is displayed in the wingform for all stations being checked.</p>		
31.	On the master arm control panel, deselect A/G.	A/G light goes off.
32.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
33.	On the master arm control panel, select, then deselect A/G.	A/G light comes on, then goes off.
34.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	

## Release and Control System Checks

Table 4-8. Fuze Function Control System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
35.	On the master arm control panel, select A/G.	A/G light comes on. Weapon select 82P is boxed and RDY appears. Box appears around 82P in wingform.
36.	Position the test set FUNCTION SWITCH to INST +195.	The test set VOLT-OHM meter indicates in the green area while the bomb button is pressed.
37.	On the right DDI, press the EFUZ pushbutton.	
38.	On the right DDI, press the INST pushbutton.	
39.	Press and release the bomb button.	
40.	Position the test set FUNCTION SWITCH to DLY 1-195.	The test set VOLT-OHM meter indicates in the green area while the bomb button is pressed.
41.	On the right DDI, press the EFUZ pushbutton.	
42.	On the right DDI, press the DLY 1 pushbutton.	
43.	Press and release the bomb button.	
44.	Position the test set FUNCTION SWITCH to DLY 2-300.	The test set VOLT-OHM meter indicates in the green area while the bomb button is pressed.
45.	On the right DDI, press the EFUZ pushbutton.	
46.	On the right DDI, press the DLY 2 pushbutton.	
47.	Press and release the bomb button.	
48.	On the right DDI, deselect 82P.	82P has box removed and RDY is removed.
49.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from the display and SAFE appears.
50.	On the master arm control panel, deselect A/G.	A/G light goes off.
51.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	Indicator display areas off.
52.	Position the left and right DDI power switches to OFF.	
53.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
54.	Disconnect/remove test equipment from the aircraft.	
55.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	



**4-25. AIM-7/AIM-9 SYSTEM CHECK (END-TO-END).**

4-26. The following procedures are used to check the aircraft AIM-7/AIM-9 missile system.

1. Test Equipment Required.
  - a. AIM-7:
    - (1) AIM-7 Test Set A/E-24T-216.
    - (2) Breech test adapter W12/W47 or 74D750020 (2 each).
    - (3) AIM-7 motor fire wire.
    - (4) AIM-7 shear wafer.
  - b. AIM-9:
    - (1) AIM-9 Test Set AN/AWM-100.
    - (2) GMU-24A/A Flowmeter.
    - (3) (LAU-7 HIPAG) HIPAG/TACTS WAFER (N-T41508-111 0045).
    - (4) (LAU-7 HIPAG) 9707 MK 2 Pressure gauge.
    - (5) (OFP 13C, 15C SMUG and 17C) H173A/AIC Headset or equivalent.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. (AIM-7) Install the AIM-7 test set as follows:
    - (1) Install motor fire wire and shear wafer on station to be checked.
    - (2) Pylon stations:
      - (a) Ensure the launcher safety release knob indicates GREEN.
      - (b) Connect the AIM-7 test set to the shear wafer and the motor fire wire.
    - (3) Fuselage stations:
      - (a) Install the breech test adapters in the launcher breeches of the station being checked.

**Release and Control System Checks**

(b) Connect the AIM-7 test set to the shear wafer, motor fire wire, and the breech test adapters.

(c) Ensure the launcher hooks are closed and the safety release knob indicates GREEN.

<b>CAUTION</b>
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Do not install AWM-100-1003 on LAU-7D/A launcher's.

c. (AIM-9/LAU-7 WITHOUT HIPAG/LAU-127) Inspect nitrogen receiver assembly pressure gauge for adequate supply of nitrogen.

d. (AIM-9 with LAU-7) Install and connect the AIM-9 missile test set to the first LAU-7 launcher to be checked as follows:

(1) Remove the launcher detent holddown pin.

(2) Insert the test set striker block in the slot of the launcher rail.

(3) Install, rotate, and hold the test set detent wrench, lifting the launcher detent firing points.

(4) Slide the striker block forward to align the launcher detent firing points.

(5) Release the test set detent wrench to lower the launcher detent firing points into engagement with the striker block contacts. Leave the test set detent wrench installed.

(6) (WITHOUT HIPAG) Connect the AIM-9 test set cable to the test set and launcher umbilical connector.

(7) (WITH HIPAG) Connect TACTS/HIPAG wafer to launcher umbilical connector and connect the A1-4-9 test set cable to the test set and the TACTS/HIPAG wafer.

e. (AIM-9 with LAU-127) Install and connect the AIM-9 missile test set to the first LAU-127 launcher to be checked as follows:

(1) Ensure the IFL is in the LOCKED position.

(2) Rotate the forward fairing actuator to the open position and slide the fairing open.

(3) Ensure the FWD DETENT is ENGAGED.

(4) Ensure the AIM-120 UMBILICAL, AIM-9 STRIKER, AFT DETENT, and AFT DAMPENER are RETRACTED.

(5) Insert test set striker block in the slot of the launcher rail.

(6) Slide the striker block forward to align the launcher detent firing points.

(7) Rotate the AIM-9 STRIKER to ENGAGE.

- (8) Rotate the AFT DETENT to ENGAGE.
- (9) Connect the AIM-9 test set cable to the test set and the launcher umbilical cable.
- f. Set the Weapons Insertion Panel ARMAMENT/STA codes as follows:
  - (1) (F/A-18A thru D non SMUG) 9 for wing tip.
  - (2) (F/A-18A thru D non SMUG) 80 for pylon station AIM-9.
  - (3) (F/A-18C/D SMUG) 80 for all AIM-9 stations.
  - (4) (F/A-18A thru D non SMUG) 84 for all for AIM-7 pylon station.
  - (5) (F/A-18C/D SMUG) 84 for all AIM-7 stations.
- g. Connect electrical power to aircraft.
- h. (If applicable) Apply cooling.

<b>WARNING</b>
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Prior to applying power, the cockpit switches and controls must be ready to receive power.

- i. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, and 2 to B ON for 3 seconds.
- j. (F/A-18A thru D non SMUG) AIM-7/AIM-9 System Check (End-To-End), proceed to (Table 4-9).
- k. (F/A-18C/D SMUG) AIM-7/AIM-9 System Check (End-To-End) (SMUG), proceed to (Table 4-10).

## Release and Control System Checks

Table 4-9. AIM-7/AIM-9 System Check (End-to-End)

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
3.	On the left DDI, press the BIT pushbutton.	
4.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	(10A and 12A) BIT display appears, SMS NOT RDY displayed.
5.	On the right DDI, press the STORES pushbutton.	(91C/13C/15C and 17C) BIT control display appears, NOT RDY displayed below STORES.
6.	On the master arm control panel, position the MASTER switch to ARM.	Stores display appears.
7.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
8.	On the GND PWR control panel, position and hold switch 3 to B ON for three seconds.	
9.	(10A and 12A) On the left DDI, press and release the MAINT pushbutton option, then press and release the SMS pushbutton option.	(10A and 12A) SMS GO displayed when BIT complete. On the right DDI, ARM appears and 7F or 9M appears in the wingform for the pylon stations being checked.
10.	(91C/13C/15C and 17C) On the left DDI, press and release the STORES pushbutton option, then the SMS MAINT pushbutton option.	(91C and 13C) PBIT GO displayed below STORES when BIT complete. On the right DDI, ARM appears and 7F or 9M appears in the wingform for the pylon stations being checked.
		(15C and 17C) PBIT GO is displayed below STORES when BIT is complete. On the right DDI, ARM appears and 7F or 9M/L or R appears in the wingform for the pylon stations being checked.
		The Maintenance BIT control display appears on left DDI. SMS status message display is IN TEST and within 180 seconds SJET, PCKL, TRIG, and SSP appear above the status message display.
		STORES BIT display appears and SMS status message display is IN TEST and within 180 seconds SJET, PCKL, TRIG and (if applicable) ATRIG and SSP appear above status message display.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">ATRIG not tested, remains blank.</p>		
11.	On the left vertical control panel, position the SELECT JETT switch as follows; LFUS MSL, RFUS MSL, RACK LCHR, STORES, SAFE, then push and release the JETT switch.	GO appears after SJET.

**Table 4-9. AIM-7/AIM-9 System Check (End-to-End) (Continued)**

CHECK STEP	PROCEDURES	RESULT
12.	Press and release the bomb release button.	GO appears after PCKL.
13.	Press and release the trigger.	GO appears after TRIG.
14.	On the flaps, landing gear and stores indicator panel, press the CTR, LI, RI, LO and RO switches.	GO appears after SSP and station lights come on.
15.	Deselect the CTR, LI, RI, LO and RO switches.	Station lights go off.
<p style="text-align: center;"><b>NOTE</b></p> <p>Primary weapon interface checked in SCS 15C and subsequent is AIM-9X. AIM-9L/M interface is also checked, however, only weapon ID 9X is displayed. Possible test indications are:</p> <p>SEL: Indicates weapon station checks good for AIM-9L/M or if properly configured with LAU-7D/A AIM-9X.</p> <p>WDEGD: Indicates weapon station has failed for AIM-9X and is good for AIM-9L/M ONLY.</p> <p>WFAIL: Indicates weapon station has failed for AIM-9X/L/M.</p> <p>Aircraft stations are tested in numerical sequence.</p>		
16.	On the right throttle grip, press and release the cage/uncage switch.	<p>(10A/12A/91C and 13C) TST appears for station(s) under test and within 30 seconds STBY appears under TST. (AIM-7) Within 60 seconds RDY appears under TST for each station with a test adapter installed. (AIM-9 with LAU-7) Within 60 seconds FAIL appears under TST for stations with detent wrench installed. (AIM-9 with LAU-127) RDY appears under TST.</p> <p>(15C and 17C) (AIM-7) TST appears for stations under test and within 30 seconds STBY appears under TST. Within 60 seconds RDY appears under TST for each station with a test adapter installed.</p> <p>(AIM-9 with LAU-7) TEST 9X (and /L or R for pylon stations) appears for stations under test and within 60 seconds is replaced with WFAIL for stations with detent wrench installed.</p> <p>(AIM-9 with LAU-127) TEST 9X and /L or R appears for stations under test and within 60 seconds is replaced with SEL (9X, -9L, -9M) or WDEGD (-9L, -9M).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p>If LAU-7 launchers are not being checked proceed to Step 19.</p>		
17.	(AIM-9 with LAU-7) Remove the detent wrench from the LAU-7 launchers being checked.	

## Release and Control System Checks

Table 4-9. AIM-7/AIM-9 System Check (End-to-End) (Continued)

CHECK STEP	PROCEDURES	RESULT
18.	On the right throttle grip, press and release the cage/uncage switch.	(10A/12A/91C and 13C) TST appears for station(s) under test, STBY comes on, then goes off and RDY comes on.  (15C and 17C) Test 9X (and /L or R for pylon stations) appears for stations under test and within 60 seconds is replaced with SEL (-9X, -9L, -9M) or WDEGD (-9L, -9M).
19.	On the GND PWR control panel, position switch 3 to AUTO.	
20.	Disconnect and if applicable, transfer the AIM-7/AIM-9 test sets (and if applicable) TACTS/HIPPAG wafer, to the next station to be checked. (AIM-9 with LAU-7) leave the detent wrench installed.	
21.	On the GND PWR control panel, position and hold switch 3 to B ON for three seconds.	(10A and 12A) SMS GO displayed when BIT complete. On the right DDI, ARM appears and 7F or 9M appears in the wingform for the pylon stations being checked.  (91C and 13C) PBIT GO displayed below STORES when BIT complete. On the right DDI, ARM appears and 7F or 9M appears in the wingform for the pylon stations being checked.  (15C and 17C) PBIT GO is displayed below STORES when BIT is complete. On the right DDI, ARM appears and 7F or 9M/L or R appears in the wingform for the pylon stations being checked.
22.	(10A and 12A) On the left DDI, press and release the MAINT pushbutton option, then press and release the SMS pushbutton option.	The Maintenance BIT control display appears on left DDI. SMS status message display is IN TEST and within 180 seconds SJET, PCKL, TRIG, and SSP appear above the status message display.
23.	(If applicable) Repeat Steps 16 thru 22, for the remaining stations to be checked.	

**NOTE**

9707 MK 2 Pressure gauge is NOT to be used on LAU-7.

Preferred method for checking HIPPAG is with 9707 MK 2 pressure gauge.

Ensure TACTS/HIPPAG wafer is removed prior to installing 9707 MK 2 or GMU-24A/A.

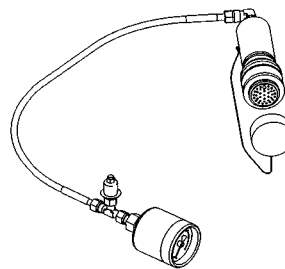
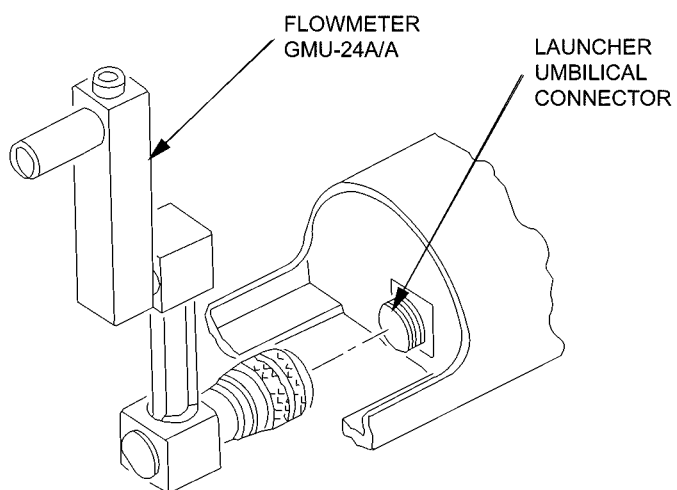
**WARNING**

Ensure 9707 MK 2 pressure gauge relief valve is CLOSED and vent tube is NOT restricted prior to installing.

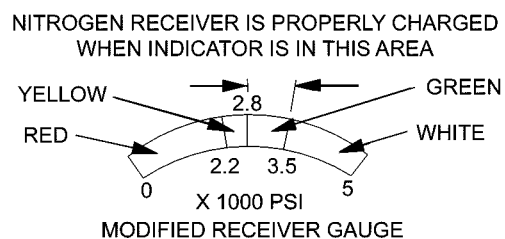
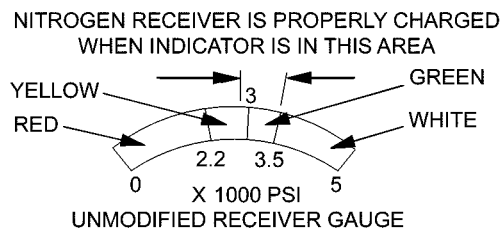
**Table 4-9. AIM-7/AIM-9 System Check (End-to-End) (Continued)**

CHECK STEP	PROCEDURES	RESULT
24.	Install the (LAU-7 WITHOUT HIPAG) GMU-24A/A flowmeter or (LAU-7 WITH HIPAG) 9707 MK 2 pressure gauge (Figure 4-2).	(10A and 12A) BIT display appears with SMS GO when BIT is complete.  (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete. WDEGD appears in the wingform under the station being checked.
25.	On F/A-18A thru D non SMUG, on the Weapons Insertion Panel, set the ARMAMENT codes to 5 (left wingtip) and 6 (right wingtip).	
26.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
<div>NOTE</div> <p>BIT must be complete before proceeding to Step 27.</p> <p>(HIPAG) There is a 30 second delay after selecting IR COOL – ORIDE before HIPAG flow valve opens.</p> <p>(HIPAG) If HIPAG is at minimum pressure, a delay of 6-8 minutes may occur before flow or pressure indications are seen.</p> <p>(HIPAG) If using GMU-24A/A, place IR COOL – OFF as soon as flow is confirmed to prevent HIPAG accumulator drain.</p>		
27.	On the map gain control panel, position the IR COOL switch to ORIDE.	(GMU-24A/A) The flow indication is above 25; (9707 MK 2) Pressure stable between 2804 – 3305 with no pressure loss.
28.	On the map gain control panel, position the IR COOL switch to OFF.	(GMU-24A/A) The flow indication is 0; (9707 MK 2) Pressure maintained.
29.	On the GND PWR control panel, position switch 3 to AUTO.	
<div>WARNING</div> <p>(9707 MK 2) Do not open pressure relief valve unless IR COOL is OFF and switch 3 is in AUTO. Do not direct vented pressure towards personnel or equipment.</p>		
30.	(9707 MK 2) Slowly open pressure relief valve.	Residual pressure removed; gauge 0 psi.
31.	Transfer the GMU-24A/A flowmeter/9707 MK 2 to the next station to be checked.	
32.	Repeat Steps 25 through 31 for the remaining AIM-9 stations to be checked.	
33.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from the display and SAFE appears.
34.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
35.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
36.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**A1-F18AE-LWS-000**  
**Release and Control System Checks**



9707 MK 2 PRESSURE GAUGE  
 (FOR USE WITH LAU-7 HIPAG)



**Figure 4-2. GMU-24A/A or 9707 MK 2 Pressure Gauge**



**Table 4-10. AIM-7/AIM-9 System Check (End-to-End) (SMUG)**

CHECK STEP	PROCEDURES	RESULT
1.	(Forward and aft cockpit) Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
<div>NOTE</div> <div>(If applicable) Perform Steps 2 through 6 from aft cockpit.</div>		
2.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	On the left DDI, wingform display appears.
3.	On the left DDI, press the STORES pushbutton.	
4.	On the right DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	On the right DDI, BIT control display appears.
5.	On the right DDI, press the BIT pushbutton.	
6.	On the right DDI, press and release the STORES pushbutton.	On the right DDI, STORES BIT display appears.
7.	On the master arm control panel, position the MASTER switch to ARM.	(Rear cockpit) On the right DDI, NOT RDY is removed and PBIT GO is displayed when BIT complete. On the left DDI, ARM appears and (13) 7F or 9M (15C and subsequent) 9M/L or R appears in the wingform for the pylon stations being checked. Ground safety handles rotate to LOCKED (stations with hooks closed).
8.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
9.	On the GND PWR control panel, position and hold switch 3 to B ON for three seconds.	
<div>NOTE</div> <div>(If applicable) Perform Steps 10 through 21 from aft cockpit.</div>		
10.	On the right advisory and threat warning indicator panel, select A/A.	A/A light comes on.
11.	On the right advisory and threat warning indicator panel, select A/G.	A/G light comes on and A/A light goes off.
12.	On the right advisory and threat warning indicator panel, deselect A/G.	A/G light goes off.
13.	On the right DDI, press and release the MENU, BIT then STORES pushbuttons.	On the right DDI, MENU, BIT then STORES BIT displays appear.
14.	On the right DDI, press and release the SMS MAINT pushbutton option.	On the right DDI, maintenance BIT format is displayed.

## Release and Control System Checks

Table 4-10. AIM-7/AIM-9 System Check (End-to-End) (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p>Right DDI displays NA for SEL JETT, PICKLE, STATION SEL, AUX RELEASE, COOLANT and WEAPON SEL.</p> <p>No test step or display is required for UNDESIGNATE.</p>		
15.	On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, MAINT is boxed and within 240 seconds SMS GO displayed. ETET pushbutton option appears and the following switch test labels are displayed below SMS IN TEST: SEL JETT, PICKLE, ATRIG, STATION REL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON SEL, UNDESIGNATE, HARM SEQ.
<p style="text-align: center;"><b>NOTE</b></p> <p>Right DDI displays NA for HARM SEQ.</p> <p>No test step or display is required for UNDESIGNATE.</p>		
16.	On the left and right hand controller, press the sensor control switch, left, right, forward, aft, and center press.	GO appears after CASTLE.
17.	On the left and right hand controller, press the multifunction switch down and release.	GO appears after RAID/FLIR.
18.	On the left and right hand controller, press the multifunction switch aft and release.	GO appears after UNCAGE.
19.	On the left and right hand controller, press the multifunction switch forward and release.	GO appears after HARM SEQ.
20.	On the right hand controller, press and release the trigger.	GO appears after ATRIG
21.	On the right DDI, press and release the BIT pushbutton.	On the right DDI, BIT control display appears.
22.	(Cockpit) On the master mode control panel, select A/A.	A/A light comes on.
23.	On the master mode control panel, select A/G.	A/G light comes on and the A/A light goes off.
24.	On the master mode control panel, deselect A/G.	A/G light goes off.
25.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
26.	On the left DDI, press the STORES pushbutton.	On the left DDI, wingform display appears.
27.	On the right DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
28.	On the right DDI, press the BIT pushbutton.	On the right DDI, BIT control display appears.
29.	On the right DDI, press and release the STORES pushbutton.	On the right DDI, STORES BIT display appears.

**Table 4-10. AIM-7/AIM-9 System Check (End-to-End) (SMUG) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
30.	On the right DDI, press and release the SMS MAINT pushbutton option.	On the right DDI, maintenance BIT format is displayed.
<b>NOTE</b> Right DDI, displays NA for HARM SEQ.		
31.	On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, MAINT is boxed and within 240 seconds SMS GO is displayed. ETET pushbutton option appears and the following switch test labels are displayed below SMS IN TEST: SEL JETT, PICKLE, TRIGGER, STATION SEL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON SEL, UNDESIGNATE, HARM SEQ.
32.	On the left vertical control panel, position the SELECT JETT switch as follows: LFUS MSL, RFUS MSL, RACK LCHR, STORES, SAFE then press and release JETT.	GO appears after SEL JETT.
33.	On the aircraft controller grip, press and release the bomb button.	GO appears after PICKLE.
34.	On the aircraft controller grip, press and release the trigger.	GO appears after TRIGGER.
35.	On the flaps, landing gear and stores indicator panel, select the CTR, LI, RI, LO and RO station select switches.	GO appears after STATION SEL and station select lights come on.
36.	Deselect the CTR, LI, RI, LO and RO station select switches.	Station select lights go off.
37.	On the ECM control panel, position the AUX REL switch to ENABLE then to NORM.	GO appears after AUX RELEASE.
38.	On the aircraft controller grip, press the sensor control switch forward, aft, left, right, then press and release.	GO appears after CASTLE.
39.	On the map gain control panel, position the IR COOL switch to NORM, ORIDE then OFF.	GO appears after COOLANT.
40.	On the throttle quadrant, press and release the RAID/FLIR switch.	GO appears after RAID/FLIR.
41.	On the right throttle grip, press and release the cage/uncage switch.	GO appears after UNCAGE.
42.	On the aircraft controller grip, position the weapon select switch forward, aft, right, left then press and release.	GO appears after WEAPON SEL.

## Release and Control System Checks

Table 4-10. AIM-7/AIM-9 System Check (End-to-End) (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p>Primary weapon interface checked in SCS 15C and subsequent is AIM-9X. AIM-9L/M interface is also checked, however, only weapon ID 9X is displayed. Possible test indications are:</p> <p>SEL: Indicates weapon station checks good for AIM-9L/M or if properly configured with LAU-7D/A AIM-9X.</p> <p>WDEGE: Indicates weapon station has failed for AIM-9X and is good for AIM-9L/M ONLY.</p> <p>WFAIL: Indicates weapon station has failed for AIM-9X/L/M.</p> <p>Stations are tested in numerical sequence.</p>		
43.	On the right DDI, press and release the ETET pushbutton option.	<p>(13C) TST appears for station(s) under test and within 30 seconds STBY appears under TST. (AIM-7) Within 60 seconds RDY appears under TST for each station with a test adapter installed. (AIM-9 with LAU-7) Within 60 seconds FAIL appears under TST for stations with detent wrench installed. (AIM-9 with LAU-127) RDY appears under TST.</p> <p>(15C and 17C) (AIM-7) TST appears for stations under test and within 30 seconds STBY appears under TST. Within 60 seconds RDY appears under TST for each station with a test adapter installed.</p> <p>(AIM-9 with LAU-7) TEST 9X (and /L or R for pylon stations) appears for stations under test and within 60 seconds is replaced with WFAIL for stations with detent wrench installed.</p> <p>(AIM-9 with LAU-127) TEST 9X and /L or R appears for stations under test and within 60 seconds is replaced with SEL (9X, -9L, -9M) or WDEGD (-9L, -9M).</p>
<p style="text-align: center;"><b>NOTE</b></p> <p>If LAU-7 launchers are not being checked, proceed to Step 46.</p>		
44.	(AIM-9 with LAU-7) Remove the detent wrench from the LAU-7 launchers being checked.	On the right DDI, press and release the ETET pushbutton.
45.	On the right DDI, press and release the ETET pushbutton.	<p>(13C) TST appears for station(s) under test, STBY comes on, then goes off and RDY comes on.</p> <p>(15C and 17C) Test 9X (and /L or R for pylon stations) appears for stations under test and within 60 seconds is replaced with SEL (-9X, -9L, -9M) or WDEGD (-9L, -9M).</p>

**Table 4-10. AIM-7/AIM-9 System Check (End-to-End) (SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
46.	On the GND PWR control panel, position switch 3 to AUTO.	
47.	Disconnect and if applicable, transfer the AIM-7/AIM-9 test sets (and if applicable) TACTS/HIPPAG wafer, to the next station to be checked. (AIM-9 with LAU-7) leave the detent wrench installed.	
48.	(If applicable) On the GND PWR control panel, position and hold switch 3 to B ON for three seconds.	(Rear cockpit) On the right DDI, NOT RDY is removed and PBIT GO is displayed when BIT complete. On the left DDI, ARM appears and (13) 7F or 9M (15C and subsequent) 9M/L or R appears in the wingform for the pylon stations being checked. Ground safety handles rotate to LOCKED (stations with hooks closed).
49.	(If applicable) On the right DDI, press and release the MENU, BIT then STORES pushbuttons.	On the right DDI, MENU, BIT then STORES BIT displays appear.
50.	(If applicable) On the right DDI, press and release the SMS MAINT pushbutton option.	On the right DDI, maintenance BIT format is displayed.
51.	(If applicable) On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, MAINT is boxed and within 240 seconds SMS GO displayed. ETET pushbutton option appears and the following switch test labels are displayed below SMS IN TEST: SEL JETT, PICKLE, ATRIG, STATION REL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON SEL, UNDESIGNATE, HARM SEQ.
52.	(If applicable) Repeat Steps 43 through 51 for the remaining stations to be checked.	
<p style="text-align: center;"><b>NOTE</b></p> <p>9707 MK 2 Pressure gauge is NOT to be used on LAU-7.</p> <p>Preferred method for checking HIPPAG is with 9707 MK 2 pressure gauge.</p> <p>Ensure TACTS/HIPPAG wafer is removed prior to installing 9707 MK 2 or GMU-24A/A.</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"><b>WARNING</b></div> <p>Ensure 9707 MK 2 pressure gauge relief valve is CLOSED and vent tube is NOT restricted prior to installing.</p>		
53.	(If applicable) Set the Weapons Insertion Panel station code to 80 and the nose/tail code to 00 for the stations being checked (Paragraph 5-21).	
54.	Install the (LAU-7 WITHOUT HIPPAG) GMU-24A/A flowmeter or (LAU-7 WITH HIPPAG) 9707 MK 2 pressure gauge.	

## Release and Control System Checks

Table 4-10. AIM-7/AIM-9 System Check (End-to-End) (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
55.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	On the left DDI, BIT control display appears with PBIT GO displayed below STORES when BIT complete.  On the right DDI, WDEGD appears in the wingform under the station being checked.
<p style="text-align: center;"><b>NOTE</b></p> <p>BIT must be complete before proceeding to Step 56.</p> <p>(HIPPAG) There is a 30 second delay after selecting IR COOL – ORIDE before HIPPAG flow valve opens.</p> <p>(HIPPAG) If HIPPAG is at minimum pressure, a delay of 6-8 minutes may occur before flow or pressure indications are seen.</p> <p>(HIPPAG) If using GMU-24A/A, place IR COOL – OFF as soon as flow is confirmed to prevent HIPPAG accumulator drain.</p>		
56.	On the map gain control panel, position the IR COOL switch to ORIDE.	(GMU-24A/A) The flow indication is above 25; (9707 MK 2) Pressure stable between 2804 – 3305 with no pressure loss.
57.	On the map gain control panel, position the IR COOL switch to OFF.	(GMU-24A/A) The flow indication is 0; (9707 MK 2) Pressure maintained.
58.	On the GND PWR control panel, position switch 3 to AUTO.	
<p style="text-align: center;"><b>WARNING</b></p> <p>(9707 MK 2) Do not open pressure relief valve unless IR COOL is OFF and switch 3 is in AUTO. Do not direct vented pressure towards personnel or equipment.</p>		
59.	(9707 MK 2) Slowly open pressure relief valve.	Residual pressure removed; gauge 0 psi.
60.	(If applicable) Repeat Steps 54 through 59 for the remaining AIM-9 stations being checked.	
61.	On the master arm control panel, position the MASTER switch to SAFE.	On the left DDI, ARM is removed and SAFE appears.
62.	On the ECM control panel, position the AUX PWR switch to OFF.	
63.	Position the left and right displays to OFF.	Display areas off.
64.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
65.	Disconnect/remove test equipment.	
66.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**4-27. AIM-120 SYSTEM CHECK.**

4-28. The following procedures are used to check the aircraft AIM-120 missile system.

1. Test Equipment Required:
  - a. Buffer connector.
  - b. AN/AWM-96/A Aircraft Weapons Control Test Set.
  - c. (Pylon stations) Weight On Wheels (WOW) wedge.
2. Technical Directives Required.
  - a. AFC 253.
  - b. AFC 292.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. LAU-127A/A:
    - (1) Ensure the IFL is in LOCKED position.
    - (2) Ensure the FWD DETENT is ENGAGED.
    - (3) Ensure the AIM-120 UMBILICAL is ENGAGED.
    - (4) Ensure the AFT DETENT, AIM-9 STRIKER and AFT DAMPENER are not ENGAGED.
  - c. Connect the AN/AWM-96 test set as follows:

<b>WARNING</b>
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The AN/AWM-96 Test Set must be grounded to aircraft.

- (1) Connect W13 ground strap between aircraft ground and test set.
  - (2) Connect power cable W2P1 to test set connector J2.
  - (3) Connect power cable W2P2 to power cable adapter W11P1.
  - (4) Connect power cable adapter W11P2 to the utility power receptacle in the nose wheelwell.
- d. Set the Weapons Insertion Panel ARMAMENT/STA codes as follows:
    - (1) (F/A-18A+/C/D non SMUG) Set wing tip to 9.

**Release and Control System Checks**

- (2) (F/A-18A+/C/D non SMUG) Set pylon stations to be checked to F0.
- (3) (F/A-18C/D SMUG) Set all stations to be checked to F0.
- e. Connect electrical power to aircraft.
- f. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- g. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM.
- h. (If applicable) Perform test set self test (Paragraph 4-7).
- i. Connect test cable W1P1 to test set connector J1.
- j. Connect test cable W1P2 to test adapter W10P2.

**NOTE**

The W10 retention clip is only installed when testing LAU-116 fuselage launcher's.

- k. (If applicable) Install W10 retention clip.

**WARNING**

BRAYCOTE-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

- l. Install buffer connector.
- m. Connect test adapter W10P1 to AIM-120 buffer connector.
- n. (Pylon stations) Connect test cable W8P2 and W8P3 to W12 breech adapters, and install adapters in breeches of the station to be checked.
- o. (Pylon stations) Connect W14P1 to test set connector J3; W14P2 to cable W8P1; W14P3 to W15 auxiliary breech adapter and install W15 in auxiliary breech of station to be checked.
- p. (Fuselage stations) Connect W8P1 to test set connector J3.
- q. (Fuselage stations) Ensure the launcher hooks are closed and the safety release knob indicates GREEN.
- r. (F/A-18A+/C/D non SMUG) AIM-120 System Check, proceed to (Table 4-11).
- s. (F/A-18C/D SMUG) AIM-120 System Check (SMUG), proceed to (Table 4-12).



**Table 4-11. AIM-120 System Check (End-to-End)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
1.	On the GND PWR control panel, position and hold switches 1 and 2 to B ON for 3 seconds.	After warm-up, indicator display areas appear.
2.	Position the left and right DDI power switches to DAY.	
3.	On the master arm control panel, position the MASTER switch to ARM.	
4.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
5.	(Pylon stations) On the ECM control panel, position the AUX REL switch to ENABLE.	
6.	(Pylon stations) Position WOW wedge under the right main gear proximity switch.	
7.	On the test set, position the AC switch ON.	All POWER lights come on.
8.	On the test set, press and release RESET.	
9.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
10.	On the right DDI, press the STORES pushbutton.	Wingform display appears on right DDI.
11.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
12.	On the left DDI, press and release the BIT pushbutton.	BIT control display appears, NOT RDY displayed below STORES.
<b>NOTE</b> AW 96 may not appear in box in wingform. If box is present continue check.		
13.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	On the right DDI, ARM is on, AW-96 is displayed in wingform for pylon station under test. On the left DDI, NOT RDY is removed and PBIT GO is displayed below STORES when BIT is complete. Ground safety handles rotate to LOCKED (stations with hooks closed).
14.	On the left DDI, press and release the STORES pushbutton option.	On the left DDI, STORE BIT display appears.
15.	On the left DDI, press and release the SMS MAINT pushbutton option.	On the left DDI, SMS status message display is IN TEST and within 240 seconds SJET, PCKL, TRIG, SSP and (if applicable) ATRIG appear below status message display.
<b>NOTE</b> ATRIG not tested, remains blank.		
16.	On the left vertical control panel, position the SELECT JETT switch as follows; LFUS MSL, RFUS MSL, RACK LCHR, STORES, SAFE then press and release JETT.	GO appears after SJET.

## Release and Control System Checks

Table 4-11. AIM-120 System Check (End-to-End) (Continued)

CHECK STEP	PROCEDURES	RESULT
17.	Press and release the bomb button.	GO appears after PCKL.
18.	Press and release the trigger.	GO appears after TRIG.
19.	On the flaps, landing gear and stores indicator panel, select the JETT STATION SELECT switch for CTR, LI, RI, LO and RO switches.	GO appears after SSP and station select lights come on.
20.	Deselect the CTR, LI, LO, RI and RO station select switches.	Station select lights go off.
<p style="text-align: center;"><b>NOTE</b></p> <p>(Pylon stations) Step 22 must be completed within 10 seconds after EM JETT TEST appears on left DDI or a failure will appear.</p>		
21.	On the right throttle grip, press and release the cage/uncage switch.	On the right DDI, TEST is displayed under station being checked. On the left DDI, AWM-96 TEST IN PROGRESS is displayed, then: (Pylon stations) Push and hold EMERG JETT, EM JETT TEST appears. (Fuselage stations) AWM-96 TEST RESULTS, STATION FAILS: NONE, NEXT, and RETEST. AWM-96 indicates GO.
22.	(Pylon stations) On the master arm control panel, press and hold the EMERG JETT, PUSH TO JETT switch until EM JETT TEST is removed from the DDI.	Left DDI displays; AWM-96 TEST RESULTS, RETEST, NEXT and STATION FAIL: none; AWM-96 displays GO on test set.
<p style="text-align: center;"><b>NOTE</b></p> <p>For pylon stations, proceed to Step 23. For fuselage stations proceed to Step 25.</p>		
23.	(Pylon stations) On the left DDI, press and release NEXT, if no failures are indicated.	On the right DDI; AWM-96 TEST RESULTS are removed. AIM-120 umbilical retracts. AWM-96 displays GO.
<div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <b>CAUTION</b> </div> <p style="text-align: center;">Do not press the detent button on ground safety handles.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>When rotating the ground safety handles, the handles will not go completely to LOCKED.</p>		
24.	(Pylon stations) Rotate the BRU-32 ground safety handles on the stations with hooks closed towards LOCKED position.	

**Table 4-11. AIM-120 System Check (End-to-End) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
25.	On the test set, position the AC switch to OFF.	All POWER lights go off.
26.	On the GND PWR control panel, position switch 3 to AUTO.	
27.	Disconnect and transfer the AWM-96 test set to the next station to be checked.	
28.	(If applicable) On the test set, position the AC switch ON.	All POWER lights come on.
29.	(If applicable) On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	On the right DDI, ARM is on, AW-96 is displayed in wingform for pylon station under test. On the left DDI, NOT RDY is removed and PBIT GO is displayed below STORES when BIT is complete. Ground safety handles rotate to LOCKED (stations with hooks closed).
30.	(If applicable) Press and release the STORES pushbutton option, then the SMS MAINT pushbutton option.	STORES BIT display appears and SMS status message display is IN TEST and within 240 seconds SJET, PCKL, TRIG, SSP and (if applicable) ATRIG appear below status message display.
31.	Repeat Steps 21 thru 30 for the remaining stations to be checked.	
32.	(Pylon stations) On the ECM/ICM control panel, position the AUX REL switch to NORM.	
33.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed and SAFE appears.
34.	(Pylon stations) Remove WOW wedge from under the right main gear proximity switch.	
35.	(Pylon stations) On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	Ground safety handles rotate to LOCKED (stations with hooks closed).
36.	Position the left and right displays to OFF.	Indicator display areas off.
37.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
38.	Disconnect and remove test set.	
39.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

## Release and Control System Checks

Table 4-12. AIM-120 System Check (End-to-End) (SMUG)

CHECK STEP	PROCEDURES	RESULT
1.	On the GND PWR control panel, position and hold switches 1 and 2 to B ON for 3 seconds.	After warm-up, indicator display areas appear.   <

**Table 4-12. AIM-120 System Check (End-to-End) (SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b>  Right DDI displays NA for SEL JETT, PICKLE, STATION SEL, AUX RELEASE, COOLANT and WEAPON SEL.  No test step or display is required for UNDESIGNATE.</p>		
19.	On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, IN TEST is displayed and MAINT is boxed. ETET pushbutton option appears and the following switch test labels are displayed; SEL JETT, PICKLE, ATRIG, STATION SEL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON REL, UNDESIGNATE, HARM SEQ.
<p style="text-align: center;"><b>NOTE</b>  No test step or display required for ATRIG.</p>		
20.	On the left and right hand controllers, press the sensor control switch left, right, forward, aft and center, press and release.	GO appears after CASTLE.
21.	On the left and right hand controllers, press and release the UNDESIGNATE switch.	GO appears after UNDESIGNATE.
22.	On the left and right hand controllers, press the multifunction switch down and release.	GO appears after RAID/FLIR.
23.	On the left and right hand controllers, press the multifunction switch down and release.	GO appears after UNCAGE.
24.	On the left and right hand controllers, press the multifunction switch down and release.	GO appears after HARM SEQ.
25.	On the right DDI, press and release the BIT pushbutton.	On the right DDI, BIT control display appears.
<p style="text-align: center;"><b>NOTE</b>  Continue with Step 26 for fwd cockpit.</p>		
26.	On the master mode control panel, select A/A.	A/A light comes on.
27.	On the master mode control panel, select A/G.	A/G light comes on and A/A light goes off.
28.	On the master mode control panel, deselect A/G.	A/G light goes off.
29.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
30.	On the left DDI, press the STORES pushbutton.	On the left DDI, wingform display appears.
31.	On the right DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
32.	On the right DDI, press and release the BIT pushbutton.	On the right DDI, BIT control display appears.

## Release and Control System Checks

Table 4-12. AIM-120 System Check (End-to-End) (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
33.	On the right DDI, press and release the STORES pushbutton.	On the right DDI, STORES BIT format is displayed.
34.	On the right DDI, press and release the SMS MAINT pushbutton option.	On the right DDI, maintenance BIT format is displayed.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Right DDI displays NA for HARM SEQ.</p>		
35.	On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, SMS IN TEST is displayed and MAINT is boxed. ETET pushbutton option appears and the following switch test labels are displayed; SEL JETT, PICKLE, TRIGGER, STATION SEL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON SEL, UNDESIGNATE, HARM SEQ.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">No test step or display is required for UNDESIGNATE.</p>		
36.	On the left vertical control panel, position the SELECT JETT switch as follows: LFUS MSL, RFUS MSL, RACK LCHR, STORES, SAFE then press and release JETT.	GO appears after SEL JETT.
37.	On the aircraft controller grip, press and release the bomb button.	GO appears after PICKLE.
38.	On the aircraft controller grip, press and release the trigger.	GO appears after TRIGGER.
39.	On the flaps, landing gear and stores indicator panel, select CTR, LI, RI, LO and RO station select switches.	GO appears after STATION SEL and station select lights come on.
40.	On the flaps, landing gear and stores indicator panel, deselect CTR, LI, RI, LO and RO station select switches.	Station select lights go off.
41.	On the ECM control panel, position the AUX REL switch to ENABLE.	GO appears after AUX RELEASE.
42.	On the aircraft controller grip, press the sensor control switch left, right, forward, aft and center press.	GO appears after CASTLE.
43.	On the map gain control panel, position the IR COOL switch to NORM, ORIDE then OFF.	GO appears after COOLANT.
44.	On the throttle quadrant, press and release the RAID/FLIR switch.	GO appears after RAID/FLIR.
45.	On the right throttle grip, press and release the cage/uncage switch.	GO appears after UNCAGE.

**Table 4-12. AIM-120 System Check (End-to-End) (SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
46.	On the aircraft controller grip, position the weapon select switch forward, aft, right then press and release.	GO appears after WEAPON SEL.
<p style="text-align: center;"><b>NOTE</b></p> <p>(Pylon stations) Step 48 must be completed within 10 seconds after EM JETT TEST appears on left DDI or a failure will appear.</p>		
47.	On the right DDI, press and release the ETET pushbutton option.	<p>On the left DDI, AW 96 is boxed and TEST is displayed under the station being checked.</p> <p>On the right DDI, ETET then AWM-96 TEST IN PROGRESS is displayed.</p> <p>(Pylon stations) On the right DDI, EM JETT TEST appears.</p> <p>(Fuselage stations) On the right DDI, AWM-96 TEST RESULTS, STATION FAILS, retest and NEXT are displayed. On the test set, GO is displayed.</p>
48.	(Pylon stations) On the master arm control panel, press and hold the EMERG JETT, PUSH TO JETT switch until EM JETT TEST is removed from the DDI.	On the right DDI, AWM-96 TEST RESULTS, RETEST, NEXT and STATION FAILS are displayed.
49.	(Pylon stations) On the right DDI, press and release NEXT.	On the right DDI, AWM-96 TEST RESULTS are removed and SMS MAINT BIT display appears. AIM-120 UMBILICAL retracts at station under test. On the test set, GO is displayed.
<div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <b>CAUTION</b> </div> <p style="text-align: center;">Do not press the detent button on ground safety handles.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p>When rotating ground safety handles, the handles will not go completely to LOCKED.</p>		
50.	(Pylon stations) Rotate the BRU-32 ground safety handles on the stations with hooks closed, toward the LOCKED position.	
51.	On the test set, position the AC switch to OFF.	All POWER lights go off.
52.	On the ECM control panel, position the AUX REL switch to NORM.	
53.	On the master arm control panel, position the MASTER switch to SAFE.	On the left DDI, ARM is removed and SAFE is displayed.
54.	On the GND PWR control panel, position switch 3 to AUTO.	

## Release and Control System Checks

Table 4-12. AIM-120 System Check (End-to-End) (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
55.	(If applicable) Disconnect and transfer the AWM-96 test set to the next station being checked.	<p>On the right DDI, NOT RDY is removed and PBIT GO is displayed when BIT is complete.</p> <p>All POWER lights come on.</p>
56.	(If applicable) On the master arm control panel, position the MASTER switch to ARM.	
57.	(If applicable) In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
58.	(If applicable) On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
59.	(If applicable) On the test set, position the AC switch to ON.	
60.	(If applicable) On the test set, press and release RESET.	
61.	On the ECM control panel, position the AUX REL switch to ENABLE.	
62.	(If applicable) Repeat Steps 29 through 35 and 47 through 54 for the remaining stations being checked.	
63.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
64.	Position the left and right displays to off.	
65.	Remove WOW wedge from under the right main gear proximity switch.	
66.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
67.	Disconnect/remove test set.	
68.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	<p>Ground safety handles rotate to LOCKED (stations with hooks closed).</p> <p>Display areas off.</p>



#### **4-29. AGM-65 SYSTEM CHECK.**

4-30. The following procedures are used to check the aircraft AGM-65 Maverick (series) missile system.

1. Test Equipment Required.
  - a. AN/AWM-92 Aircraft Weapon Control Test Set.
  - b. Proximity Switch Control.
2. Technical Directives Required.
  - a. SEC 5177.
  - b. SEC 5330.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. Set the Weapons Insertion Panel ARMAMENT/STA code to 65 for AGM-65E, 66 for AGM- 65F, for stations being checked (Paragraph 5-21).
  - c. Close the BRU-32 suspension hooks on stations being checked.

<b>WARNING</b>
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Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.

<b>WARNING</b>
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The AN/AWM-92 Test Set must be grounded to aircraft.

- e. Connect the grounding strap between aircraft ground and the test set.
- f. Connect the AWM-92 power cable between the utility power receptacle (nose wheelwell) and the test set power connector.
- g. Connect electrical power to aircraft.
- h. (If applicable) Apply cooling.

<b>WARNING</b>
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Prior to applying power, the cockpit switches and controls must be ready to receive power.

## A1-F18AE-LWS-000

### Release and Control System Checks

- i. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1 and 2 to B ON for 3 seconds.
- j. Position the left and right DDI power switches to DAY (allow for warm-up).
- k. (F/A-18A thru D 161353 thru 163782) Position the Horizontal Indicator (HI) OFF/NIGHT/DAY switch to DAY.
- l. (F/A-18C/D 163985 and UP) Position the Multipurpose Color Display (MPCD), OFF/NGT switch to NGT and the DAY/AUTO switch as applicable (allow for warm-up).
- m. Position the Head-Up Display Unit HUD SYM-BRT control to BRT.
- n. (If applicable) Perform the test set self test (Paragraph 4-7).
- o. Connect the test set W4 cable between the AGM-65 adapter connector and the test set connector J1.
- p. Proceed to AGM-65E System Check (Table 4-13) or (Table 4-14) for AGM-65F System.

**Table 4-13. AGM-65E System Check**

CHECK STEP	PROCEDURES	RESULT
1.	Position the test set AC power switch to ON.	On the test set, the following lights/switches are illuminated: ACFT TYPE, CLEAR, KYBD TEST, LAMP TEST, RESET and 0 through 9.
2.	(F/A-18A/B) On the test set, press 7, 3 and ACFT TYPE in sequence. (F/A-18A+/C/D WITHOUT FLIR/LASER pod installed) On the test set, press 1, 8, 3 and ACFT TYPE in sequence.	On the test set, the following light/switch is illuminated: On the test set, the following light/switch is illuminated: RUN.
3.	(F/A-18A+/C/D WITH FLIR/LASER pod installed) On the test set, press 1, 8, 4 and ACFT type in sequence.	On the test set, the following light/switch is illuminated: RUN.
4.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 100 - 1.
5.	On the GND PWR control panel, set and hold switch 3 to B ON for 3 seconds.	
6.	(F/A-18A+/C/D WITH FLIR/LASER pod installed) On the sensor control box, place the FLIR switch to STBY.	
7.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	

**Table 4-13. AGM-65E System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
8.	On the left DDI, press the BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete.
9.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	(91C, 13C and 15C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
10.	On the right DDI, press the STORES pushbutton.	Weapons display appears with 1 MAV in the wingform. SAFE is on.
<p style="text-align: center;"><b>NOTE</b></p> <p>(F/A-18C/D SMUG) If an SMS OPGO and STA DEGD occurs in Steps 8 and 10 respectively, perform Steps 11 through 13. Otherwise proceed to Step 14 and continue the check.</p>		
11.	On the left DDI, press STORES pushbutton, then the SMS pushbutton.	On the left DDI, SMS status message displays IN TEST.
12.	On the left DDI, press STOP pushbutton.	On the left DDI, SMS status message displays PBIT GO.
13.	On the SMP, change Weapon Insertion Panel ARMAMENT/STA code to 00 then back to 65.	On the right DDI, 1 MAV in wingform. SAFE is on.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Ensure that TGT is not boxed on the HI/MPCD display.</p>		
14.	On the test set, press RUN.	On the test set the following lights/switches are illuminated: STEP GO, RUN, 100 - 0.
15.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 200 - 1.
16.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
17.	Select the A/G mode.	A/G light comes on.
18.	On the right DDI, select MAV.	Box appears around weapon select MAV with X through it. Video appears, straight grid lines, no vertical roll or horizontal tearing and at least 7 shades of video are displayed. CAGED is on.
19.	On the aircraft controller grip, push the sensor control switch to the right.	On the right DDI, TDC diamond appears in upper right corner of display.
20.	On the right DDI, press the DLY 2 pushbutton.	On the right DDI, DLY 2 is boxed.
21.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	

## Release and Control System Checks

Table 4-13. AGM-65E System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
22.	On the left DDI, press the STORES pushbutton.	Weapons display appears. Box is around weapon select MAV with an X through it. 1 MAV boxed and RDY in wingform. SAFE is on.
23.	On the master arm control panel, position the MASTER switch to ARM.	
24.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the left DDI, SAFE is removed from display and ARM appears.
25.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 200-2.
26.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: TIP.
27.	(F/A-18A+/C/D) On the right throttle grip, press and release the cage/uncage switch.	On the test set, the following lights/switches are illuminated: STEP GO, 200-0, RUN. (F/A-18C/D) On the left DDI, RDY is displayed under MAV and the X is removed. On the right DDI, UNCAGED is displayed under TDC diamond.
28.	(F/A-18A/B) On the right throttle grip, press and release the TDC switch.	On the left DDI, RDY is displayed under MAV and the X is removed. On the right DDI, UNCAGED is displayed under TDC diamond.
29.	On the right DDI, press UFC.	
<div>NOTE</div> <div>Station being checked will precede laser code in box.</div>		
30.	On the UFC, press 1, 1, 1, 1.	On the right DDI, code 1111 displayed.
31.	On the UFC, press ENT.	
32.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 400-1.
33.	On the right DDI, press the UFC pushbutton.	On the UFC, code 1222 displayed.
34.	On the UFC, press 1, 2, 2, 2.	
<div>NOTE</div> <div>Steps 35 and 36 must be completed within 30 seconds.</div>		
35.	On the test set, press RUN.	On the right DDI, 1,2,2,2 is displayed. On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 400-2.
36.	On the UFC, press ENT.	
37.	On the right DDI, press UFC pushbutton.	

**Table 4-13. AGM-65E System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
38.	On the UFC, press 1, 3, 3, 3.	On the UFC, code 1333 displayed.
<p style="text-align: center;"><b>NOTE</b> Steps 39 and 40 must be completed within 30 seconds.</p>		
39.	On the test set, press RUN.	On the right DDI, 1,3,3,3 is displayed. On the test set, the following lights/switches are illuminated: STEP GO, RUN, 400-0.  On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 800-1.
40.	On the UFC, press ENT.	
41.	On the test set, press RUN.	
42.	On the aircraft controller grip, push the sensor control switch forward.	
<p style="text-align: center;"><b>NOTE</b> HUD presentation may be displayed on the left or right DDI.</p>		
43.	On the right throttle grip, press and release the cage/uncage switch.	On the right DDI, CAGED appears.
44.	On the right throttle grip, press and release the TDC switch.	On the HSI/MPCD display, TGT is boxed.
45.	On the right throttle grip, move the TDC switch full left, right, forward, aft and back to center and release.	On the HUD, the target designator moves full left, right, down, up and center.
46.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, 800-2.
47.	On the test, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 800-0.
48.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 900-1.
49.	On the HI/MPCD, press the TGT pushbutton.	On the HSI display, TGT is removed and WYPT is displayed.
50.	On the aircraft controller grip, push the sensor control switch to the right and release.	On the right DDI, the TDC diamond appears in the upper right corner of the display. On the HUD, the designator is removed.
51.	On the right throttle grip, press and hold the TDC switch.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 900-2.  On the HUD, the Maverick line of sight symbol (∇) moves left, right, down and up.  On the test set, the following lights/switches are illuminated: STEP GO, RUN, 900-0.
52.	On the test set, press RUN.	
53.	On the right throttle grip, move the TDC switch full left, right, forward, aft and release.	
54.	On the test set, press RUN.	

## Release and Control System Checks

Table 4-13. AGM-65E System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
55.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 1000-1.
56.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: TIP.
57.	On the aircraft controller grip, press and the release bomb button.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 1000-0. X appears through weapon select MAV and RDY is removed.
58.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 1100-0.
<p style="text-align: center;"><b>NOTE</b></p> <p>(F/A-18A+/C/D) Perform Steps 59 through 63 when the FLIR/LASER pod is installed on aircraft. Otherwise proceed to Step 64 and continue check.</p>		
59.	On the right DDI, select FLIR.	On the right DDI, STBY is displayed, FLIR display appears.
60.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: TIP, 1200-1.
61.	On the sensor control panel, place the FLIR switch to ON.	On the right DDI, FLIR self-test initiated. At the completion of self-test the following test set lights/switches are illuminated: STEP GO, RUN, 1200-0.
62.	On the right DDI, press and release the MENU pushbutton.	
63.	On the sensor control panel, place the FLIR switch to STBY.	On the right DDI, STBY is displayed, FLIR display appears.
64.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: UUT GO.
65.	On the DDI, deselect MAV.	Box and X are removed from weapon select MAV.
66.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
67.	Deselect the A/G.	A/G light goes off.
68.	On the proximity switch control, position the GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
69.	Position test set AC power switch to OFF.	

**Table 4-13. AGM-65E System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
70.	(F/A-18A+/C/D WITH FLIR/LASER pod installed) Proceed to Step 76 if no other stations are to be checked.	
71.	Proceed to Step 79, if no other stations are to be checked.	
72.	On the GND PWR control panel, position switch 3 to AUTO.	
73.	Disconnect and transfer the AWM-92 test set to the next station to be checked.	
74.	Repeat Steps 1 through 73 for each station to be checked.	
<div>CAUTION</div>		
(F/A-18A+/C/D WITH FLIR/LASER pod installed) FLIR must indicate NOT READY prior to removing power from the aircraft.		
75.	(F/A-18A+/C/D WITH FLIR/LASER pod installed) Perform Steps 76 through 79.	On the left DDI, FLIR must indicate NOT READY before proceeding.  Display area off.  Display area off.  Display areas off.
76.	On the sensor control panel, place the FLIR switch to OFF.	
77.	On the left DDI, press and release MENU pushbutton until the BIT pushbutton option is displayed.	
78.	On the left DDI, press the BIT pushbutton, then the STORES pushbutton.	
79.	(As applicable) Position HI or MPCD power switch to OFF.	
80.	On the HUD, position the HUD SYM-BRT control to OFF.	
81.	Position the left and right DDI power switches to OFF.	
82.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
83.	Disconnect/remove test equipment.	
84.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

## Release and Control System Checks

Table 4-14. AGM-65F System Check

CHECK STEP	PROCEDURES	RESULT
1.	Position the test set AC power switch ON, press and release RESET.	On the test set, the following lights/switches are illuminated: ACFT TYPE, CLEAR, KYBD TEST, LAMP TEST, RESET, and 0 through 9.
2.	On the test set, Press 1, 8, 2 and ACFT TYPE in sequence.	On the test set, the following light/switch is illuminated: RUN.
3.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 100 - 1.
4.	On the GND PWR control panel, set and hold switch 3 to B ON for 3 seconds.	
5.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
6.	On the left DDI, press the BIT pushbutton.	BIT control display appears, PBIT GO displayed below STORES when BIT complete.
7.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
8.	On the right DDI, press the STORES pushbutton.	Weapons display appears with 1 MAVF in the wingform. SAFE is on.
<p style="text-align: center;"><b>NOTE</b></p> <p>(F/A-18C/D SMUG) If an SMS DEGD and STA FAIL occurs in Steps 6 and 8 respectively, perform Steps 9 thru 11. Otherwise proceed to Step 12 and continue check.</p>		
9.	On the left DDI, press STORES pushbutton then SMS pushbutton.	On the left DDI, SMS status message displays IN TEST.
10.	On the left DDI, press STOP pushbutton.	On the left DDI, SMS status message displays PBIT GO.
11.	On the SMP, change Weapon Insertion Panel ARMAMENT/STA code to 00 then back to 66.	On the right DDI, 1 MAVF in wingform. SAFE is on.
12.	On the test set, press RUN.	On the test set the following lights/switches are illuminated: STEP GO, RUN, 100 - 0.
13.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 200 - 1.
14.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
15.	On the master arm control panel, select A/G.	A/G light comes on.
16.	On the right DDI, select MAVF.	On the right DDI, box appears around selected weapon with X through it. Maverick display appears with timer display on and counting down.



**Table 4-14. AGM-65F System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
17.	On the aircraft controller grip, push the sensor control switch to the right.	On the right DDI, TDC diamond appears in the upper right corner of display.
18.	On the right DDI, press the DLY 2 pushbutton.	On the right DDI, DLY 2 is boxed.
19.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
20.	On the left DDI, press the STORES pushbutton.	On the left DDI, SAFE is on and STBY is displayed below 1 MAVF.
21.	On the master arm control panel, position the MASTER switch to ARM.	
22.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the left DDI, SAFE is removed from the display and ARM appears.
23.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 200-2.
<b>NOTE</b> Timer display must be removed before continuing.		
24.	At timer completion, on the test set, press RUN.	On the test set, the following light/switch is illuminated: TIP. The right DDI displays straight grid lines, no vertical roll or horizontal tearing and at least 7 shades of video.
25.	On the right throttle grip, press and release the cage/uncage switch.	On the left DDI, 1 MAVF is boxed and RDY in wingform. On the right DDI, UNCAGED is displayed in the upper right corner. On the test set, the following lights/switches are illuminated: STEP GO, 200-0, RUN.
26.	On the test set, press RUN.	On the test set the following light/switch is illuminated: TIP.
27.	On the right throttle grip, press and release the cage/uncage switch.	On the right DDI, CAGED appears. On the test set, the following lights/switches are illuminated: STEP GO, RUN, 300-0.
28.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: TIP.
29.	On the right DDI, press and release the FOV pushbutton two times.	On the right DDI, FOV will box and unbox two times.
30.	On the right DDI, press and release the TRACK WHT pushbutton.	On the right DDI, TRACK WHT changes to TRACK BLK. On the test set the following lights/switches are illuminated: MNL ACTN, RUN, 400-1.
31.	On the right DDI, select SHIP.	On the right DDI, SHIP is boxed.
32.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 400-0.

## Release and Control System Checks

Table 4-14. AGM-65F System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
33.	On the right throttle grip, press and release the cage/uncage.	On the right DDI, UNCAGED is displayed in the upper right corner.
34.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 800-1.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">This is a no action slew. If the TDC is pressed, a failure to slew will occur.</p>		
35.	On the right throttle grip, move the TDC switch full left, right, forward, aft, then back to center and release.	On the HUD, Maverick line of sight symbol (V) moves left, right, down and up.
36.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 800-2.
37.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 800-0.
38.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 900-1.
39.	On the right throttle grip, press and hold the TDC switch.	
40.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 900-2.
41.	On the right throttle grip, move the TDC switch full left, right, forward, aft and release.	On the HUD, Maverick line of sight symbol (V) moves left, right, down and up. On the left DDI, weapon select MAVF is boxed and RDY is displayed.
42.	On the aircraft controller grip assembly, push the sensor control switch forward.	
43.	On the right throttle grip, press and release the TDC switch.	On HSI/MPCD display, TGT is boxed.
44.	On the aircraft controller grip, push the sensor control switch right.	On the right DDI, TBST is displayed.
45.	On the test set, press and release RUN.	On the test set, the following light/switch is illuminated: TIP.
46.	On the right DDI, press and release the TBST pushbutton.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 900-0.
47.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 1000-1.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Step 48 and 49 must be completed within 30 seconds.</p>		
48.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: TIP.

**Table 4-14. AGM-65F System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
49.	Press and release the bomb button.	On the left DDI, X appears through weapon select MAVF. RDY is removed and 1 is removed from MAVF in the wingform. On the test set, the following lights/switches are illuminated: STEP GO, RUN, 1000-0.
50.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 1100-0.
51.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: UUT GO.
52.	On the left DDI, deselect MAVF.	On the left DDI, box and X are removed from MAVF.
53.	On the HI/MPCD, press and release TGT.	TGT is removed and WYPT appears.
54.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed and SAFE appears.
55.	On the master arm control panel, deselect A/G.	A/G light goes off.
56.	On the proximity switch control, position the GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
57.	Position the test set AC POWER switch to OFF.	
<b>NOTE</b> Proceed to Step 62, if no other stations are to be checked.		
58.	On the MC/HYD ISOL control panel, position the MC switch to 2 OFF, then NORM.	
59.	On the GND PWR control panel, position switch 3 to AUTO.	
60.	Disconnect and transfer the AWM-92 test set to the next station to be checked.	
61.	Repeat Steps 1 through 60 for each station to be checked.	
62.	(As applicable) Position HI or MPCD power switch to OFF.	Display area off.
63.	On the HUD, position the HUD SYM-BRT control to OFF.	Display area off.
64.	Position the left and right DDI power switches to OFF.	Display area off.
65.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
66.	Disconnect/remove test equipment.	
67.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**Release and Control System Checks**

**4-31. AGM-84 D/E CHECK.**

4-32. The following procedures are used to check the aircraft AGM-84 D/E missile system.

1. Test Equipment Required.

a. TS-3519D/DSM Test Set Simulator.

b. AN/AWM-54 or AN/AWM-102 Aircraft Firing Circuit Test Set with W12/W47 or 74D750020 adapter.

c. Proximity switch control.

2. Technical Directives Required.

a. AFC 074 (F/A-18A/B).

3. Check Preparation.

a. Complete aircraft preparation procedures (Paragraph 4-9).

b. Set the Weapons Insertion Panel ARMAMENT/STA codes to 62 for the station being checked (Paragraph 5-21).

c. Close the BRU-32 suspension hooks on stations being loaded.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.

**WARNING**

The test set must be grounded to aircraft.

e. Connect the ground cable between aircraft ground and the test set.

f. Connect the test set simulator harpoon cable to the aircraft adapter harness on the first station to be checked.

g. Connect electrical power to aircraft.

h. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- i. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1 and 2 to B ON for 3 seconds.
- j. On TS-3519D/DSM test set simulator position the DAY, OFF, NIGHT switch as applicable, perform self test, and toggle the MASTER RESET switch.
- k. Proceed to the applicable AGM-84 D/E System Check as required.
  - (1) (F/A-18A/B) Table 4-15 for AGM-84 D/E LOS procedures.
  - (2) (F/A-18A+/C/D non SMUG) Table 4-16 for AGM-84 D/E Line of Sight (LOS) procedures.

**NOTE**

Table 4-17 procedures require wing pylon encoder-decoder P/N 7959350-110.

- (3) (F/A-18A+/C/D non SMUG) Table 4-17 for AGM-84 D/E full up range and bearing launch procedures.
- (4) (F/A-18C/D SMUG) Table 4-18 for AGM-84 D/E full up range and bearing launch procedures.

**Table 4-15. AGM-84 D/E LOS System Check**

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the test set, actuate and release the MASTER RESET switch.	Test set displays main menu.
3.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
4.	On the test set, actuate and release the ENTER switch.	
5.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
6.	On the test set, actuate and release the ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
7.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	

## Release and Control System Checks

Table 4-15. AGM-84 D/E LOS System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
8.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	On the left DDI, the MENU display appears.
9.	On the left DDI, press and release the BIT pushbutton.	On the left DDI, the BIT display appears, SMS GO displayed when BIT is complete.
10.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option appears.	On the right DDI, the MENU display appears.
11.	On the right DDI, press and release the STORES pushbutton.	On the right DDI, the weapons display appears with 1 HP in the wingform for the station being checked. SAFE is on. Test set displays MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO.
12.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
13.	On the master arm control panel, position the MASTER switch to ARM.	
14.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the right DDI, SAFE is removed from the display and ARM appears.
15.	On the master arm control panel, select A/G.	A/G light comes on. Test set displays DC WARMUP – GO.
16.	Latch the nose ZRF arming unit (station being checked).	
17.	On the right DDI, select HP.	On the right DDI, box appears around weapon select HP and RDY appears. Box appears around 1 HP in the wingform. Test set displays 3 PH AC A*B*C - GO, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO.
<b>NOTE</b>		
(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).		
18.	(AWM-102) Press and release the ON/OFF switch.	GO on test set when BIT complete.
19.	Connect the AWM-54/AWM-102 test set and the W12/W47 or 74D750020 adapter to the forward breech of the station being checked.	

**Table 4-15. AGM-84 D/E LOS System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
<p><b>NOTE</b></p> <p>The observation of individual indications during the launch sequence is not required. The end result must be as indicated.</p>		
20.	(AWM-54) Position the test set FCTN switch to F/C.	
21.	(AWM-54) Press and hold the test set TEST button.	
22.	(AWM-102) Select FC mode.	FC mode on test set.
23.	Press and hold the bomb button.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, ITL, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE UNSAFE. (AWM-54/102) GO on test set.
24.	Open the bomb rack suspension hooks.	ZRF arming unit remains latched.
25.	(AWM-54) Release the test set TEST button.	
26.	Release the bomb button.	On the right DDI, X appears through weapon select HP and RDY is removed. 1 is removed from HP in wingform. ZRF arming unit unlatches.
27.	(AWM-54) Position the test set FCTN switch to S/V.	
28.	(AWM-54) Press and release the test set TEST button.	GO on test set.
29.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
30.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from display and SAFE appears.
31.	On the master arm control panel, deselect A/G.	A/G light goes off.
32.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
33.	Close the suspension hooks on the station being checked.	
34.	On the test set, actuate and release the MASTER RESET switch.	Test set displays main menu.
35.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.

## Release and Control System Checks

Table 4-15. AGM-84 D/E LOS System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
36.	On the test set, actuate and release the ENTER switch.	Test set displays 01.
37.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	
38.	On the test set, actuate and release the ENTER switch.	
39.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 01.
40.	On the test set, actuate and release the ENTER switch.	Test set displays MSL ENBL - F.
41.	On the test set, actuate and release PROGRAM SELECT switches A and B until 09 is displayed.	Test set displays 09.
42.	On the test set, actuate and release the ENTER switch.	Test set displays 02.
43.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	
44.	On the test set, actuate and release the ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
45.	On the master arm control panel, select then deselect A/G.	A/G light comes on, then goes off. On the right DDI, 1 HP appears in the wingform. Test set displays MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO.
46.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UNLOCK to UP.	A/G light comes on.
47.	On the master arm control panel, select A/G.	
48.	On the master arm control panel, position the MASTER switch to ARM.	
49.	In the nose wheel well, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the right DDI, SAFE is removed and ARM appears, X is removed from weapon select HP, and RDY appears. Box appears around 1 HP in the wingform. Test set displays 3 PH AC A*B*C - GO, DC WARMUP - GO, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
50.	(AWM-54) Position the test set FCTN switch to S/V.	SV on test set.
51.	(AWM-54) Press and hold the test set TEST button.	
52.	(AWM-102) Select SV mode.	



**Table 4-15. AGM-84 D/E LOS System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
53.	Press and hold the bomb button for a minimum of 5 seconds, then release.	On the right DDI, X appears through weapon select HP, RDY is removed, and FAIL appears under 1 HP in the wingform. Test set displays MISSILE ENABLE DISCRETE FAULTED. (AWM-54) GO on the test set.
54.	(AWM-54) Release the test set TEST button.	
55.	(AWM-102) Deselect SV mode.	GO on test set.
<b>NOTE</b>		
If ENTER is held too long, the required display will be stepped over and cannot be recalled. If necessary, repeat the test from Step 30.		
56.	Momentarily actuate and release the ENTER switch.	Test set displays ABORT CMD RECEIVED, 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, ITL, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE UNSAFE, ABORT RESPONSE SENT.
57.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from display and SAFE appears.
58.	On the master arm control panel, deselect A/G.	A/G light goes off.
59.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
60.	On the test set, actuate and release the MASTER RESET.	Test set displays main menu.
61.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
62.	On the test set, actuate and release the ENTER switch.	
63.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 01.
64.	On the test set, actuate and release the ENTER switch.	
65.	On the test set, actuate and release the ENTER switch.	Test set displays MSL PRES - F.
66.	On the test set, actuate and release PROGRAM SELECT switches A and B until 09 is displayed.	Test set displays 09.
67.	On the test set, actuate and release the ENTER switch.	
68.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
69.	On the test set, actuate and release the ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.

## Release and Control System Checks

Table 4-15. AGM-84 D/E LOS System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
70.	On the master arm control panel, select then deselect A/G.	A/G light comes on then goes off. X remains through weapon select HP, 1 HP remains in wingform, and FAIL is removed.
71.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
72.	On the master arm control panel, position the MASTER switch to ARM.	
73.	In the nose wheel well, position the ARMAMENT OVERRIDE to OVERRIDE.	On the right DDI, SAFE is removed, ARM appears and LKD appears.
74.	On the master arm control panel, select A/G.	A/G light comes on. On the right DDI, X is removed from weapon select HP, RDY appears, box appears around 1 HP in the wingform and LKD is removed. Test set displays 3 PH AC A*B*C - GO, DC WARMUP - GO, STATION SELECT, MGU/SKR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
75.	(AWM-54) Position the test set FCTN switch to F/C.	
76.	(AWM-54) Press and hold the test set TEST button.	
77.	(AWM-102) Select FC mode.	FC mode on test set.
78.	Press and release the bomb button, and open the suspension hooks on the station being checked.	On the right DDI, X appears through weapon select HP, RDY is removed, and 1 is removed from HP in the wingform. Test set displays MISSILE PRESENT DISCRETE FAULTED. (AWM-54/102) GO on test set.
79.	(AWM-54) Release the test set TEST button.	
80.	(AWM-54) Position the test set FCTN switch to S/V.	
81.	(AWM-54) Press and release the test set TEST button.	GO on test set.
82.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
83.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from the display and SAFE appears.
84.	On the master arm control panel, deselect A/G.	A/G light goes off.
85.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
86.	Position the test set DAY, OFF, NIGHT switch to OFF.	
87.	On the right DDI, deselect HP.	On the right DDI, box and X are removed from weapon select HP.
88.	On the GND PWR control panel, position switch 3 to AUTO.	

**Table 4-15. AGM-84 D/E LOS System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
	<b>NOTE</b> If no other stations are to be checked, proceed to Step 92.	
89.	Disconnect and transfer the test sets to the next station to be checked.	
90.	Position the test set DAY, OFF, NIGHT switch as required.	
91.	Repeat Steps 2 through 90 for the remaining stations to be checked.	
92.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
93.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
94.	Disconnect/remove test equipment from aircraft and area.	
95.	(AWM-102) Press and release ON/OFF switch.	Test set display off.
96.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**Table 4-16. AGM-84 D/E LOS System Check (Non SMUG)**

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY	After warm-up indicator display areas appear.
2.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
3.	On the test set, actuate and release ENTER switch.	
4.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
5.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
6.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
7.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
<b>NOTE</b> If 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT does not appear on the test set display, continue the test. No fault has occurred. If the test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT other than noted in this procedure actuate and release the test set ENTER switch and continue test.		

Table 4-16. AGM-84 D/E LOS System Check (Non SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
8.	On the left DDI, press the BIT pushbutton.	BIT control display appears, PBIT GO displayed below STORES when BIT complete. Test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT.
9.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
10.	On the right DDI, press the STORES pushbutton.	On the right DDI, the Weapons display appears with 1 HPC for station being checked. SAFE is on. Test set displays MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO.
11.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
12.	On the master arm control panel, position the MASTER switch to ARM.	On the right DDI, SAFE is removed from the display and ARM appears.
13.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
14.	On the master arm control panel, select A/G.	A/G light comes on. Test set displays DC WARMUP - GO.
15.	Latch the nose ZRF arming unit (station being checked).	
16.	On the right DDI, select HPC.	On the right DDI, box appears around the weapon select HPC and RDY appears. On the left DDI, 1 HPC is boxed in the wingform. Test set displays 3 PH AC A*B*C - GO, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO.
<b>NOTE</b>		
(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).		
17.	(AWM-102) Press and release the ON/OFF switch.	GO on test set when BIT complete.
18.	Connect the AWM-54/AWM-102 test set and W12/W47 or 74D750020 adapter to the forward breech of the station being checked.	
<b>NOTE</b>		
The observation of individual indications during the launch sequence is not required. The end result must be as indicated.		
19.	(AWM-54) Position the test set FCTN switch to F/C.	FC mode on test set.
20.	(AWM-54) Press and hold the test set TEST button.	
21.	(AWM-102) Select FC mode.	

**Table 4-16. AGM-84 D/E LOS System Check (Non SMUG) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
22.	Press and hold the bomb button.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, ITL, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE UNSAFE. (AWM-54/-102) GO on test set.
23.	Open the bomb rack suspension hooks.	ZRF arming unit remains latched.
24.	(AWM-54) Release the test set TEST button.	
25.	Release the bomb button.	On the right DDI, X appears through weapon select HPC and RDY is removed from the wingform. ZRF arming unit unlatches.
26.	(AWM-54) Position the FCTN switch to S/V.	
27.	(AWM-54) Press and release the test set TEST button.	GO on test set.
28.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
29.	On the right DDI, deselect HPC.	On the right DDI, box is removed from weapon select HPC.
30.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
31.	On the master arm control panel, deselect A/G.	A/G light goes off.
32.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
33.	Close the suspension hooks on station being checked.	
34.	On the GND PWR control panel, position switch 3 to AUTO.	
35.	On the test set, actuate and release MASTER RESET.	Test set displays main menu.
36.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
37.	On the test set, actuate and release ENTER switch.	
38.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
39.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.

## Release and Control System Checks

Table 4-16. AGM-84 D/E LOS System Check (Non SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p>If 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT does not appear on the test set display, continue test. No fault has occurred.</p> <p>If test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT other than noted in this procedure actuate and release the test set ENTER switch and continue test.</p>		
40.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	BIT control display appears, PBIT GO displayed below STORES when BIT complete. Test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT. On the right DDI, 1 HPC displayed for station being checked. SAFE is on. LOS is on.
41.	On the test set, actuate and release MASTER RESET.	Test set displays main menu.
42.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
43.	On the test set, actuate and release ENTER switch.	
44.	On the test, set actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 01.
45.	On the test set, actuate and release ENTER switch.	
46.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 01.
47.	On the test set, actuate and release ENTER switch.	Test set displays MSL ENBL-F.
48.	On the test set, actuate and release PROGRAM SELECT switches A and B until 09 is displayed.	Test set displays 09.
49.	On the test set, actuate and release ENTER switch.	
50.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
51.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO, MISSILE PRESENT, MISSILE SAFE.
52.	Position the proximity switch control LEFT, RIGHT NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
53.	On the master arm control panel, position the MASTER switch to ARM.	
54.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On DDI, SAFE is removed from the display and ARM appears.
55.	On the master arm control panel, select A/G.	A/G light comes on.

**Table 4-16. AGM-84 D/E LOS System Check (Non SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
56.	On the right DDI, select HPC.	On the right DDI, box appears weapon select HPC and RDY appears. Box appears around 1HPC in wingform. Test set displays 3 PH AC A*B*C - GO, DC WARMUP - GO, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO.
57.	(AWM-54) Press and hold the test set TEST button.	
58.	(AWM-102) Select SV mode.	SV on test set.
59.	Press and hold the bomb button for a minimum of 5 seconds then release.	On the right DDI, X appears through weapon select HPC and RDY is removed, 1 HPC FAIL displayed in wingform. Test set displays MISSILE ENABLE DISCRETE FAULTED. (AWM-54) GO on test set.
60.	(AWM-54) Release the test set TEST button.	
61.	(AWM-102) Deselect SV mode.	GO on test set.
<b>NOTE</b>		
If ENTER is held too long, the required display will be stepped over and cannot be recalled. If necessary, repeat test from Step 29.		
62.	Momentarily actuate and release the ENTER switch.	Test set displays ABORT COMMAND RECEIVED, 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, ITL, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE UNSAFE, ABORT RESPONSE SENT.
63.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
64.	On the master arm control panel, deselect A/G.	A/G light goes off.
65.	Position the proximity switch control GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
66.	Position the test set simulator DAY, OFF, NIGHT switch to OFF.	
67.	On the right DDI, deselect HPC.	Box and X are removed from HPC.
<b>NOTE</b>		
If no other stations are to be checked proceed to Step 73.		
68.	On the GND PWR control panel, position switch 3 to AUTO.	
69.	Disconnect/transfer test sets to next station to be checked.	
70.	Position the test set simulator DAY, OFF, NIGHT switch as required.	

## Release and Control System Checks

Table 4-16. AGM-84 D/E LOS System Check (Non SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
71.	On the test set, actuate and release the MASTER RESET switch.	Test set displays main menu.
72.	Repeat Steps 2 thru 71 for the remaining stations to be checked.	
73.	Position the left and right DDI power switches to OFF.	Display areas off.
74.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
75.	Disconnect/remove test equipment.	Test set display off.
76.	(AWM-102) Press and release ON/OFF switch.	
77.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

Table 4-17. AGM-84 D/E Full Up System Check (Non SMUG)

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
3.	On the test set, actuate and release ENTER switch.	
4.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
5.	On the test set, actuate and release ENTER switch.	
6.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
7.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
8.	On the left DDI, press and release the BIT pushbutton.	



**Table 4-17. AGM-84 D/E Full Up System Check (Non SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
<b>NOTE</b>		
If 3 PH AC PWR NOT REMOVED ON STA DESELECT does not appear on the test set display, continue test. No error has occurred.		
If test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT other than noted in this procedure actuate and release test set ENTER switch and continue test.		
9.	On the left DDI, press and release the STORES pushbutton.	On the left DDI, BIT control display changes to STORES BIT display with SMS GO displayed when BIT complete. On test set display, 3 PH AC PWR NOT REMOVED PRIOR TO DESELECT.
10.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
11.	On the right DDI, press and release the STORES pushbutton.	
<b>NOTE</b>		
If TEST is displayed, do not proceed to Step 12 until TEST is removed from wingform.		
12.	On the test set, actuate and release MASTER RESET.	Test set displays 02.
13.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	
14.	On the test set, actuate and release ENTER switch.	
15.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
16.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO, MISSILE PRESENT, MISSILE SAFE.
17.	On the proximity switch control, position LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
18.	On the master arm control panel, position the MASTER switch to ARM.	
19.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the right DDI, SAFE is removed from the display and ARM appears.
20.	On the master arm control panel, select A/G.	
21.	Latch nose ZRF arming unit (station being checked).	

## Release and Control System Checks

Table 4-17. AGM-84 D/E Full Up System Check (Non SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
22.	On the right DDI, select HPD.	On the right DDI, box appears around weapon select HPD and RDY appears. Box appears around 1 HPD in wingform and RDY appears. Test set displays 3 PH AC A*B*C - NO GO; STATION SELECT; MGU/SKR HTR PWR - NO GO; BATTERY HTR PWR - NO GO.
<p style="text-align: center;"><b>NOTE</b></p> <p>Ensure mode BOL is selected before proceeding. Ensure Harpoon Turn Point (HPTP) is deselected before proceeding.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Do not proceed to Step 23 until TIMING is removed from the right DDI.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).</p>		
23.	(AWM-102) Press and release the ON/OFF switch.	GO on test set when BIT complete.
24.	Connect the AWM-54/AWM-102 test set and W12/W47 or 74D750020 adapter to the forward breech of station being checked.	
<p style="text-align: center;"><b>NOTE</b></p> <p>Observation of the individual indication during the launch sequence is not required. End result must be as indicated.</p>		
25.	(AWM-54) Position the test set FCTN switch to F/C.	FC mode on test set.
26.	(AWM-54) Press and hold the test set TEST button.	
27.	(AWM-102) Select FC mode.	
28.	Press and hold the bomb button.	
		Test set display, 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, ITL, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE UNSAFE. (AWM-54/AWM-102) GO on test set.
29.	Open the bomb rack suspension hooks.	ZRF arming units remain latched.
30.	(AWM-54) Release the test set TEST button.	
31.	Release the bomb button.	On the right DDI, X appears through weapon select HPD and RDY is removed. 1 HPD is boxed and H+ ULK in wingform.
32.	(AWM-54) Position the test set FCTN switch to S/V.	

**Table 4-17. AGM-84 D/E Full Up System Check (Non SMUG) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
33.	(AWM-54) Press and release the test set TEST button.	GO on test set.
34.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
35.	Close suspension hooks on the station being checked.	
36.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from display and SAFE appears.
37.	On the master arm control panel, deselect A/G.	A/G light goes off.
38.	On the right DDI, deselect HPD.	On the right DDI, box and X are removed from weapon select HPD.
39.	Position the proximity switch control, GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
40.	On the GND PWR control panel, position switch 3 to AUTO.	
41.	On the test set, actuate and release the MASTER RESET.	Test set displays main menu.
42.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
43.	On the test set, actuate and release ENTER switch.	
44.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
45.	On the test set, actuate and release ENTER switch.	
<b>NOTE</b>		
If 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT does not appear on the test set display, continue test. No fault has occurred.		
If test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT other than noted in this procedure actuate and release the test set ENTER switch and continue test.		
46.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	On left DDI, BIT control display changes to STORES BIT display with SMS GO displayed when BIT complete. Test set display, 3 PH PWR NOT REMOVED PRIOR TO DESELECT.  On right DDI, weapon display appears with 1 HPD for station being checked. SAFE is on.
<b>NOTE</b>		
If TEST is displayed, do not proceed to Step 47 until TEST is removed from wingform.		
47.	On the test set, actuate and release MASTER RESET.	Test set displays main menu.
48.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
49.	On the test set, actuate and release ENTER switch.	

## Release and Control System Checks

Table 4-17. AGM-84 D/E Full Up System Check (Non SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
50.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 01.
51.	On the test set, actuate and release ENTER switch.	
52.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 01.
53.	On the test set, actuate and release ENTER switch.	Test set displays MSL ENBL-F.
54.	On the test set, actuate and release PROGRAM SELECT switches A and B until 09 is displayed.	Test set displays 09.
55.	On the test set, actuate and release ENTER switch.	
56.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
57.	On the test set, actuate and release ENTER switch.	Test set display, 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO, MISSILE PRESENT, MISSILE SAFE.
58.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK to UP.	
59.	On the master arm control panel, position the MASTER switch to ARM.	
60.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the right DDI, SAFE is removed from display and ARM appears.
61.	On the master arm control panel, select A/G.	A/G light comes on. Test set display, DC WARMUP - GO.
62.	On the right DDI, select HPD.	On the right DDI, box appears around weapon select HPD and RDY appears. Box appears around 1 HPD in the wingform. Test set display 3 PH A*B*C - GO, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Do not proceed to Step 63 until TIMING is removed from the right DDI.</p>		
63.	(AWM-54) Press and hold the test set TEST button.	
64.	(AWM-102) Select SV mode.	SV on test set.
65.	Press and hold the bomb button for a minimum of 5 seconds, then release.	On the right DDI, X appears through weapon select HPD and RDY is removed, 1 HPD WFAIL displayed in wingform. Test set display, MISSILE ENABLE DISCRETE FAULTED. (AWM-54) GO on test set.

**Table 4-17. AGM-84 D/E Full Up System Check (Non SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
66.	(AWM-54) Release the test set TEST button.	GO on test set.
67.	(AWM-102) Deselect SV mode.	
NOTE		
If ENTER is held too long, the required display will be stepped over and cannot be recalled. If necessary, repeat test from Step 36.		
68.	Momentarily actuate and release ENTER switch.	Test set display; ABORT COMMAND RECEIVED, 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, ITL, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE UNSAFE, ABORT RESPONSE SENT.
69.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from display and SAFE appears.
70.	On the master arm control panel, deselect A/G.	A/G light goes out.
71.	Position the proximity switch control GEAR UPLOCK, switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
72.	On the right DDI, deselect HPD.	Box and X are removed from weapon select HPD.
73.	Position the test set DAY, OFF, NIGHT switch to OFF.	
NOTE		
If no other stations are to be checked proceed to Step 79.		
74.	On the GND PWR control panel, position switch 3 to AUTO.	Test set displays main menu.
75.	Disconnect and transfer the test sets to the next station to be checked.	
76.	Position the test set simulator DAY, OFF, NIGHT switch as required.	
77.	On the test set, actuate and release MASTER RESET switch.	
78.	Repeat Steps 2 thru 77 for remaining stations to be checked.	Display areas off.
79.	Position the left and right DDI power switches to OFF.	
80.	On the GND PWR control panel, position the EXT PWR switch to OFF.	Test set display off.
81.	Disconnect/remove test equipment.	
82.	(AWM-102) Press and release ON/OFF switch.	
83.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

## Release and Control System Checks

Table 4-18. AGM-84 D/E Full Up System Check (SMUG)

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
3.	On the test set, actuate and release ENTER switch.	
4.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
5.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARM UP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.
6.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
7.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
8.	On the left DDI, press and release the BIT pushbutton.	BIT control display appears on the left DDI, PBIT GO displayed below STORES when BIT complete. Test set displays INPUT SIGNAL ERROR DATA ENABLE TIMEOUT.
9.	On the left DDI, press and release the STORES pushbutton.	On the left DDI, BIT control display changes to STORES BIT display with SMS GO displayed when BIT complete. Test set displays INPUT SIGNAL ERROR DATA ENABLE TIMEOUT.
10.	On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
11.	On the right DDI, press and release the STORES pushbutton.	On the right DDI, weapon display appears with HPC displayed for station being checked. SAFE is on.
12.	On the test set, actuate and release MASTER RESET.	
13.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
14.	On the test set, actuate and release ENTER switch.	
15.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
16.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE SAFE.

**Table 4-18. AGM-84 D/E Full Up System Check (SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
<b>NOTE</b>		
If 3 PH AC PWR NOT REMOVED ON STA DESELECT does not appear on the test set display, continue test. No error has occurred.		
If test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT other than noted in this procedure actuate and release test set ENTER switch and continue test.		
17.	On the master arm control panel, select then deselect A/G.	A/G light comes on then goes off. On the right DDI, HPC is removed and 1 HPD appears in the wingform. Test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT.
<b>NOTE</b>		
If TEST is displayed on the right DDI, do not proceed to Step 18 until TEST is removed from wingform.		
18.	On the test set, actuate and release MASTER RESET.	Test set displays 02.
19.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	
20.	On the test set, actuate and release ENTER switch.	
21.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
22.	On the test set, actuate and release ENTER switch.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO, MISSILE PRESENT, MISSILE SAFE.
23.	On the proximity switch control, position LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	On the right DDI, SAFE is removed from the display and ARM appears.
24.	On the master arm control panel, position the MASTER switch to ARM.	
25.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
26.	On the master arm control panel, select A/G.	A/G light comes on. Test set displays DC WARMUP - GO.
27.	Latch nose ZRF arming unit (station being checked).	On the right DDI, box appears around weapon select HPD and RDY appears. Box appears around 1 HPD in wingform and RDY appears. Test set displays 3 PH AC A*B*C - GO, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO.
28.	On the right DDI, select HPD.	

## Release and Control System Checks

Table 4-18. AGM-84 D/E Full Up System Check (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
<b>NOTE</b>		
Ensure BOL is selected before proceeding. Ensure Harpoon Turn Point (HPTP) is deselected before proceeding.		
<b>NOTE</b>		
Do not proceed to Step 30 until TIMING is removed from the right DDI.		
<b>NOTE</b>		
(AWM-102) A measurement must be made in FC or SV mode for the test set to automatically exit the mode and display a GO or NO GO. Under normal conditions in SV mode (no stray voltage detected) or abnormal conditions in FC mode (no fire pulse detected) the operator must press and release the mode select switch a second time to exit the mode and receive an indication (GO in SV or NO GO in FC).		
29.	(AWM-102) Press and release the ON/OFF switch.	GO on test set when BIT complete.
30.	Connect the AWM-54/AWM-102 test set and W12/W47 or 74D750020 adapter to the forward breech of station being checked.	
<b>NOTE</b>		
Observation of the individual indications during the launch sequence is not required. End result must be as indicated.		
31.	(AWM-54) Position the test set FCTN switch to F/C.	FC mode on test set.
32.	(AWM-54) Press and hold the test set TEST button.	
33.	(AWM-102) Select FC mode.	
34.	Press and hold the bomb button.	
		Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, ITL, STATION SELECT, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE UNSAFE. (AWM-54/AWM-102) GO on test set.
35.	Open the bomb rack suspension hooks.	ZRF arming units remain latched.
36.	(AWM-54) Release the test set TEST button.	On the right DDI, X appears through weapon select HPD and RDY is removed. 1 HPD is boxed and H+ ULK in wingform.
37.	Release the bomb button.	
38.	(AWM-54) Position the test set FCTN switch to S/V.	
39.	(AWM-54) Press and release the test set TEST button.	GO on test set.



**Table 4-18. AGM-84 D/E Full Up System Check (SMUG) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
40.	(AWM-102) Select, then deselect SV mode.	SV, then GO on test set.
41.	Close suspension hooks on the station being checked.	
42.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from display and SAFE appears.
43.	On the master arm control panel, deselect A/G.	A/G light goes off.
44.	On the right DDI, deselect HPD.	On the right DDI, box and X are removed from weapon select HPD.
45.	Position the proximity switch control, GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
46.	On the test set, actuate and release the MASTER RESET.	Test set displays main menu.
47.	On the master arm control panel, select then deselect A/G.	A/G light comes on then goes off. On the right DDI, HPD is removed and HPC appears.
48.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
49.	On the test set, actuate and release ENTER switch.	
50.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
51.	On the test set, actuate and release ENTER switch.	
52.	On the master arm control panel, select then deselect, A/G.	A/G light comes on, then goes off. On the right DDI, HPC is removed and 1 HPD appears in the wingform. Test set displays 3 PH AC PWR WAS NOT REMOVED ON STA DESELECT.
<b>NOTE</b>		
If TEST is displayed on the right DDI, do not proceed to Step 53 until TEST is removed from wingform.		
53.	On the test set, actuate and release MASTER RESET.	Test set displays main menu.
54.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	Test set displays 02.
55.	On the test set, actuate and release ENTER switch.	
56.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 02.
57.	On the test set, actuate and release ENTER switch.	
58.	On the test set, actuate and release PROGRAM SELECT switches A and B until 01 is displayed.	Test set displays 02.
59.	On the test set, actuate and release ENTER switch.	Test set displays MSL ENBL-F.
60.	On the test set, actuate and release PROGRAM SELECT switches A and B until 09 is displayed.	Test set displays 09.

## Release and Control System Checks

Table 4-18. AGM-84 D/E Full Up System Check (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
61.	On the test set, actuate and release ENTER switch.	Test set displays 02.
62.	On the test set, actuate and release PROGRAM SELECT switches A and B until 02 is displayed.	
63.	On the test set, actuate and release ENTER switch.	
64.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK to UP.	Test set displays 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, MGU/SKR HTR PWR - GO, BATTERY HTR PWR - GO, MISSILE PRESENT, MISSILE SAFE.
65.	On the master arm control panel, position the MASTER switch to ARM.	On the right DDI, SAFE is removed from display and ARM appears.
66.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
67.	On the master arm control panel, select A/G.	
68.	On the right DDI, select HPD.	A/G light comes on. Test set displays DC WARMUP - GO.
		On the right DDI, box appears around weapon select HPD and RDY appears. Box appears around 1 HPD in wingform and RDY appears. Test set displays 3 PH AC A*B*C - GO, STATION SELECT, MGU - SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Do not proceed to Step 69 until TIMING is removed from the right DDI.</p>		
69.	(AWM-54) Press and hold the test set TEST button.	SV mode on test set.
70.	(AWM-102) Select SV mode.	
71.	Press and hold the bomb button for a minimum of 5 seconds, then release.	
72.	(AWM-54) Release the test set TEST button.	On the right DDI, X appears through weapon select HPD and RDY is removed, 1 HPD WFAIL displayed in wingform. Test set displays MISSILE ENABLE DISCRETE FAULTED. (AWM-54) GO on test set.
73.	(AWM-102) Deselect SV mode.	GO on test set.
<p style="text-align: center;"><b>NOTE</b></p> <p>If ENTER is held too long, the required display will be stepped over and cannot be recalled. If necessary, repeat test from Step 42.</p>		

**Table 4-18. AGM-84 D/E Full Up System Check (SMUG) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
74.	On the test set, momentarily actuate and release ENTER switch.	Test set displays ABORT COMMAND RECEIVED, 3 PH AC A*B*C - NO GO, DC WARMUP - NO GO, STATION DESELECT, ITL, MGU/SKR HTR PWR - NO GO, BATTERY HTR PWR - NO GO, MISSILE PRESENT, MISSILE UNSAFE, ABORT RESPONSE SENT.
75.	On the master arm control panel, position the MASTER switch to SAFE.	On the right DDI, ARM is removed from display and SAFE appears.
76.	On the master arm control panel, deselect A/G.	A/G light goes out.
77.	Position the proximity switch control GEAR UPLOCK, switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	
78.	On the right DDI, deselect HPD.	Box and X are removed from weapon select HPD.
79.	Position the test set DAY, OFF, NIGHT switch to OFF.	
<b>NOTE</b> If no other stations are to be checked proceed to Step 85.		
80.	On the GND PWR control panel, position switch 3 to AUTO.	
81.	Disconnect and transfer the test set to the next station to be checked.	
82.	Position the test set simulator DAY, OFF, NIGHT switch as required.	
83.	On the test set, actuate and release MASTER RESET switch.	Test set displays main menu.
84.	Repeat Steps 2 thru 83 for remaining stations to be checked.	
85.	Position the left and right DDI power switches to OFF.	Display areas off.
86.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
87.	Disconnect/remove test equipment.	
88.	(AWM-102) Press and release ON/OFF switch.	Test set display off.
89.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

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**Release and Control System Checks**

**4-33. AGM-88 SYSTEM CHECK.**

4-34. The following procedures are used to check the AGM-88 system.

1. Test Equipment Required.

- a. AN/AWM-92 Aircraft Weapon Control Test Set.
- b. Proximity switch control.

2. Technical Directives Required.

- a. SEC 5177.
- b. SEC 5330.

3. Check Preparation.

- a. Complete aircraft preparation procedures (Paragraph 4-9).
- b. Set the Weapons Insertion Panel ARMAMENT/STA codes to 64 for the station being checked (Paragraph 5-21).
- c. Close the BRU-32 suspension hooks on stations being checked.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- d. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.

**WARNING**

The AN/AWM-92 Test Set must be grounded to aircraft.

- e. Connect the grounding strap between aircraft ground and the test set.
- f. Connect the AWM-92 power cable between the utility power receptacle (nose wheelwell) and the test set power connector.
- g. Connect electrical power to aircraft.
- h. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- i. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1 and 2 to B ON for 3 seconds.
- j. Position the left and right DDI power switches to DAY (allow for warm-up).
- k. (If applicable) Perform test set self test (Paragraph 4-7).
- l. Connect the test set W6 cable between the HARM adapter connector and test set connector J1.
- m. Proceed to AGM-88 System Check (Table 4-19).

**Table 4-19. AGM-88 System Check**

CHECK STEP	PROCEDURES	RESULT
1.	On the test set, position AC power switch to ON.	On the test set, the following lights/switches are illuminated: ACFT TYPE, CLEAR, KYBD TEST, LAMP TEST, RESET and 0 through 9.
2.	On the test set, press 1, 8, and ACFT TYPE in sequence.	
3.	On the test set, press RUN.	
4.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	On the test set, the following light/switch is illuminated: RUN.
5.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
6.	On the left DDI, press the BIT pushbutton.	
7.	On right DDI, press and release MENU pushbutton until STORES pushbutton option is displayed.	(10A and 12A) BIT display appears. SMS GO displayed when BIT complete.  (91C/13C/15C and 17C) BIT control display appears. PBIT GO displayed below STORES when BIT complete.
8.	On the right DDI, press the STORES pushbutton.	
9.	On the test set, press RUN.	
		The weapons display appears with 1 HARM in wingform for the station being checked. SAFE is on.
		On the test set, the following lights/switches are illuminated: STEP GO, RUN, 100 - 0.

## Release and Control System Checks

Table 4-19. AGM-88 System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
10.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 200 - 2.
11.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: TIP, END TEST.
12.	(10A and 12A) On the left DDI, press the SMS/CLC/WPN pushbutton.  (91C/13C/13C SMUG/15C/15C SMUG and 17C) On the left DDI, press SEL BIT and then STORES.	IN TEST comes on, then goes off and GO is displayed next to SMS/CLC/WPN in BIT display.  Box appears around SEL BIT, IN TEST comes on, then goes off and GO is displayed below STORES.
13.	(91C/13C/13C SMUG/15C/15C SMUG and 17C) On the left DDI, press SEL BIT.	Box is removed from SEL BIT.
14.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR switches to WT OFF WHEELS and the GEAR UPLOCK switch to UP.	
15.	On the master arm control panel, select A/G.	A/G light comes on, 1 HARM STBY appears in wingform.
16.	On the master arm control panel, position the MASTER switch to ARM.	
17.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	On the right DDI, SAFE is removed and ARM appears.
18.	On the right DDI, select HARM.	On the right DDI, box appears around weapon select HARM with X through it. HARM display appears.
19.	On the left DDI, press and release the MENU pushbutton option until the STORES pushbutton option is displayed.	
20.	On the left DDI, press and release the STORES pushbutton.	Weapons display appears on the left DDI with 1 HARM boxed in wingform and STBY comes on.
21.	(10A/12A and 91C) On the right DDI, select PB. (13C/15C and 17C) On the right DDI, select MODE PB.	On the right DDI, box appears around PB.
22.	(10A/12A and 91C) On the right DDI, select TOO. (13C/15C and 17C) On the right DDI, select MODE TOO.	On the right DDI, box is removed from PB and appears around TOO.

**Table 4-19. AGM-88 System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
<p><b>NOTE</b></p> <p>CLC indication will be 5.X. First digit of ELT must match CLC (CLC 5.X, ELT 5XX).</p> <p>For CLC 5.X, SID wingform has six stations. Aircraft outboard and inboard stations correspond to SID wingform midboard and inboard stations, respectively.</p>		
23.	(10A/12A/91C and 13C) On the right DDI, select CLASS then SID. (15C and 17C) On the right DDI, select MSN, then SID.	On the right DDI SID displays: CLC - 5X, ELT - 5XX. (If applicable) GEO ID GT (station being checked) in SID wingform.
24.	(10A/12A/91C and 13C) On the right DDI, select CLASS, then GND. (15C and 17C) On the right DDI, select MSN, then GND.	On the right DDI, targets appear.
25.	On the left throttle grip, press and release the RAID/FLIR switch several times.	On the right DDI, the target box will move with depression.
26.	On the right throttle grip, press and release the CAGE/UNCAGE switch.	On the right DDI, a single boxed target and H - OFF appears. X is removed and RDY appears.
27.	(10A/12A/91C and 13C) On the right DDI, press the RESET pushbutton. (15C and 17C) On the right throttle grip, press and release the cage/uncage switch.	
28.	(10A/12A/91C and 13C) On the right DDI, select CLASS, then SID. (15C and 17C) On the right DDI, select MSN, then SID.	On the right DDI SID displays: CLC - 5.X, ELT - 5XX. (If applicable) GEO ID GT (station being checked) in SID wingform.
29.	On the test set, press END TEST.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 200 - 0.
30.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 300 - 0.
31.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: TIP, END TEST, 400 - 0.
32.	(10A/12A/91C and 13C) On the right DDI, select CLASS, then GND. (15C and 17C) On the right DDI, select MSN, then GND.	On the right DDI, targets appear.
33.	On the right throttle grip, press and release the cage/uncage switch.	On the right DDI, target is boxed. On the left DDI, X is removed from weapon select HARM and RDY appears. H - OFF comes on.
34.	Press and release the bomb button.	On the right DDI, HARM display is removed. On the left DDI, X appears through weapon select HARM, RDY is removed. H - OFF goes off, and H+LKD comes on. On the test set, the following lights/switches are illuminated: STEP GO, RUN, 400 - 0.

## Release and Control System Checks

Table 4-19. AGM-88 System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
35.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 500 - 3.
36.	On the left vertical control panel, rotate the SELECT JETT switch to STORES.	Ground safety handles rotate to UNLOCKED.
37.	On the flaps, landing gear and stores indicator panel, press the JETT STATION SELECT switch for station being checked.	Selected station light comes on.
<div>NOTE</div> <div>Step 38 and 39 must be completed within 10 seconds.</div>		
38.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 500 - 0.
39.	On the left vertical control panel, press and release the SELECT JETT, JETT switch.	
40.	On the test set, press RUN.	On the test set, the following lights/switches are illuminated: MNL ACTN, RUN, 600 - 4.
41.	On the master arm control panel, deselect A/G.	A/G light goes off.
42.	On the master arm control panel, position the MASTER switch to SAFE.	On the left DDI, ARM is removed and SAFE appears.
43.	On the proximity switch control, position the GEAR UPLOCK switch to NORM and the LEFT, RIGHT, NOSE GEAR switches to NORM.	Selected station light goes off.
44.	On the flaps, landing gear and stores indicator panel, deselect the JETT STATION SELECT switch for station being checked.	
45.	On the left vertical control panel, rotate the SELECT JETT switch to SAFE.	On the test set, the following lights/switches are illuminated: STEP GO, RUN, 600 - 0.
46.	On the test set, press RUN.	
47.	On the test set, press RUN.	On the test set, the following light/switch is illuminated: UUT GO.
48.	Position the test set AC power switch to OFF.	On the left DDI, box and X are removed from the weapon select HARM.
49.	On the left DDI, deselect HARM.	
<div>NOTE</div> <div>Proceed to Step 53, if no other stations are to be checked.</div>		



**Table 4-19. AGM-88 System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
50.	On the GND PWR control panel, position switch 3 to AUTO.	Display areas off.
51.	Disconnect and transfer the AWM-92 test set to the next station to be checked.	
52.	Repeat Steps 1 through 51 for each station to be checked.	
53.	Position the left and right DDI power switches to OFF.	
54.	On the GND PWR control panel, set the EXT PWR switch to OFF.	
55.	Disconnect/remove test equipment.	
56.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

#### **4-35. MIL-STD-1760 WEAPONS/STORES INTERFACE SYSTEM CHECK.**

4-36. The following procedures are used to check the MIL-STD-1760 system for operation.

1. Test Equipment Required.
  - a. AN/AWM-96 Aircraft Weapon Control Test Set.
  - b. Weight On Wheels (WOW) wedge.
  - c. Headset
2. Technical Directives Required.
  - a. AFC 253
  - b. AFC 292
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).
  - b. F/A-18A+/C/D (non SMUG) Set the Weapons Insertion Panel ARMAMENT code to 9 for wing-tip stations.
  - c. Set the Weapon Insertion Panel STA code to F0 and the nose and tail codes to 00 for the pylon stations to be checked (Paragraph 5-21).
  - d. Close the BRU-32 suspension hooks on the stations being checked.

**WARNING**

The AN/AWM-96 Test Set must be grounded to the aircraft.

- e. Connect the W13 ground strap between aircraft ground and the test set.
- f. Connect power cable W2P1 to the test set connector J2.
- g. Connect power cable W2P2 to the power cable adapter W11P1.
- h. Connect power cable adapter W11P2 to the utility power receptacle in the nose wheelwell.
- i. Connect electrical power to aircraft.
- j. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- k. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM.
- l. (If applicable) Perform test set self test (Paragraph 4-7).
- m. Connect test cable W1P1 to the test set connector J1.
- n. Connect test cable W1P2 to the test adapter W16P2.
- o. Connect test set adapter W16P1 to the pylon adapter cable.
- p. Install forward, aft and auxiliary breech adapters into BRU-32 being checked.
- q. Connect adapter cable W8P2 (forward) and W8P3 (aft) to primary breech adapters.
- r. Connect test cable W14P3 to the auxiliary breech adapter.
- s. Connect adapter cable W8P1 to test cable W14P2.
- t. Connect test adapter cable W14P1 to test set connector J3.
- u. Connect headset, weapon volume to midrange.
- v. F/A-18A+/C/D (non SMUG) Proceed to MIL-STD-1760 WEAPONS/STORES INTERFACE System Check (Table 4-20).
- w. F/A-18C/D (SMUG) Proceed to MIL-STD-1760 WEAPONS/STORES INTERFACE System Check (SMUG) (Table 4-21).

**Table 4-20. MIL-STD-1760 Weapons/Stores Interface System Check**

CHECK STEP	PROCEDURES	RESULT
1.	On the GND PWR control panel, set and hold switches 1 and 2 to B ON and 4 to A ON for 3 seconds.	After warm-up, the indicator display areas appear.  After warm-up, the indicator display areas appear.    Wingform display appears on the left DDI.    BIT control display appears, with NOT RDY displayed below STORES.  <

## Release and Control System Checks

Table 4-20. MIL-STD-1760 Weapons/Stores Interface System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">ATRIG not tested, remains blank.</p>		
18.	On the left vertical control panel, position the SELECT JETT switch as follows: LFUS MSL, RFUS MSL, RACK LCHR, STORES, SAFE then press and release JETT.	GO appears after SJET.
19.	On the aircraft controller grip, press and release the bomb button.	GO appears after PCKL.
20.	On the aircraft controller grip, press and release the trigger.	GO appears after TRIG.
21.	On the flaps, landing gear and stores indicator panel, press the CTR, LI, RI, LO and RO switches.	GO appears after SSP and station select lights come on.
22.	Deselect the CTR, LI, RI, LO and RO station select switches.	Station select lights go off.
23.	On the right throttle grip, press and release the cage/uncage switch.	On the left DDI, TEST is displayed for the station under test in the wingform. On the right DDI, AWM-96 audio test format is displayed and audio tone comes on, then goes off in the headset.
<p style="text-align: center;"><b>NOTE</b></p> <p>During the following video procedures, each video display format must have straight grid lines, no vertical roll, no horizontal tearing.</p> <p>F/A-18A+ and F/A-18C/D 163427 thru 163782, perform Steps 24 thru 27.</p> <p>F/A-18C/D 163985 thru 165206, proceed to Step 26.</p>		
24.	On the right DDI, press and release PASS.	Audio test format is removed and video displayed.
25.	On the right DDI, press and release PASS.	Video format is removed from the right DDI and displayed on the left DDI.
<p style="text-align: center;"><b>NOTE</b></p> <p>The right DDI emergency jettison test will automatically fail if PUSH TO JETT, Step 27 is not completed within 10 seconds.</p>		
26.	On the left DDI, press and release PASS.	Video format is removed from the left DDI and the right DDI displays EMJETT TEST, PUSH/HOLD EMERG JETT SWITCH.
27.	On the master arm control panel, press and hold the EMERG JETT, PUSH TO JETT switch until emergency jettison format is removed from the right DDI.	On the right DDI, AW 96 TEST IN PROGRESS displayed, then TEST RESULTS, STATION FAILS; none, RETEST and NEXT. AWM-96 indicates GO. Ground safety handles go to UNLOCKED and disconnected.

**Table 4-20. MIL-STD-1760 Weapons/Stores Interface System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">F/A-18A+ and F/A-18C/D 163427 thru 163782, proceed to Step 36.</p>		
28.	On the right DDI, press and release PASS.	Audio test format is removed and video displayed.
29.	On the right DDI, press and release PASS.	Video format is removed from the right DDI and displayed on the left DDI.
30.	On the left DDI, press and release PASS.	Video format is removed from the left DDI and displayed on the MPCD.
31.	On the MPCD, press and release PASS.	Video format is removed from the MPCD and displayed on the right DDI.
32.	On the right DDI, press and release PASS.	Video format is removed from the right DDI and displayed on the left DDI.
33.	On the left DDI, press and release PASS.	Video format is removed from the left DDI and displayed on the MPCD.
<p style="text-align: center;"><b>NOTE</b></p> <p>The right DDI emergency jettison test will automatically fail if PUSH TO JETT, Step 35, is not completed within 10 seconds.</p>		
34.	On the MPCD, press and release PASS.	Video format is removed from the MPCD and the right DDI displays AWM-96 TEST IN PROGRESS then EMJETT TEST, PUSH/HOLD EMERG JETT SWITCH.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Do not press EMERG JETT switch until EMJETT TEST is displayed on right DDI.</p>		
35.	On the master arm control panel, press and hold the EMERG JETT, PUSH TO JETT switch until emergency jettison format is removed from the right DDI.	On the right DDI, AWM 96 TEST IN PROGRESS displayed, then TEST RESULTS, STATION FAILS; none, RETEST and NEXT. AWM-96 indicates GO. Ground safety handles UNLOCKED and disconnected.
36.	On the right DDI, if no failures have occurred, press and release NEXT.	On the left DDI, IN TEST is removed.
<div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><b>CAUTION</b></div> <p style="text-align: center;">Do not press the detent button on the ground safety handles.</p>		
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">When rotating the ground safety handles, the handles will not go completely to LOCKED.</p>		

## Release and Control System Checks

Table 4-20. MIL-STD-1760 Weapons/Stores Interface System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
37.	Rotate all BRU-32 ground safety handles on stations with hooks closed towards the LOCKED position.	Test set POWER lights off.
38.	Position the test set AC switch to OFF.	
39.	On the ECM control panel, position the AUX REL switch to NORM.	
40.	On the master arm control panel, position the MASTER switch to SAFE.	
41.	On the GND PWR control panel, position switch 3 to AUTO.	ARM is removed from the display and SAFE appears.
42.	(If applicable) Disconnect and transfer the AWM-96 test set to the next station to be checked.	
43.	(If applicable) On the master arm control panel, position the MASTER switch to ARM.	
44.	(If applicable) In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
45.	(If applicable) On the test set, position the AC switch to ON.	All POWER lights come ON.
46.	(If applicable) On the test set, press and release RESET.	
47.	(If applicable) On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
48.	(If applicable) On the MC/HYD ISOL control panel, position the MC switch to 1 OFF for 5 seconds, then to NORM.	
49.	(If applicable) On the ECM control panel, position the AUX REL switch to ENABLE.	On the right DDI, NOT RDY is removed and PBIT GO is displayed when BIT is complete. Ground safety handles rotate to LOCKED (stations with hooks closed).
50.	Repeat Steps 16 and 17 and 23 thru 41 for the remaining stations to be checked.	
51.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	
52.	Position the left, right and center displays to OFF.	
53.	Remove WOW wedge from under the right main gear proximity switch.	Ground safety handles rotate to LOCKED on stations with hooks closed.  Display areas off.
54.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
55.	Disconnect and remove test set equipment.	
56.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**Table 4-21. MIL-STD-1760 Weapons/Stores Interface System Check (SMUG)**

CHECK STEP	PROCEDURES	RESULT
1.	On the GND PWR control panel, set and hold switches 1 and 2 to B ON and 4 to A ON for 3 seconds.	
2.	(Cockpit and rear cockpit) Position the left and right DDI power switches to DAY.	After warm-up, display indicator areas appear.
3.	(Cockpit) Position the MPCD OFF/NGT and DAY/AUT switches as required.	After warm-up, display indicator areas appear.
4.	(Cockpit) Position the up front control OFF/BRT switch as required.	After warm-up, display indicator areas appear.
5.	On the master arm control panel, position the MASTER switch to ARM.	
6.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
7.	Position WOW wedge under the right main gear proximity switch.	
8.	On the test set, position the AC switch to ON.	All POWER lights come on.
9.	On the test set, press and release RESET.	
10.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
11.	On the left DDI, press the STORES pushbutton.	On the left DDI, wingform display appears.
12.	On the right DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
13.	On the right DDI, press and release the BIT pushbutton.	On the right DDI, BIT control display appears.
14.	On the right DDI, press and release the STORES pushbutton.	On the right DDI, STORES BIT display appears.
15.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	(Rear cockpit) On the right DDI, NOT RDY is removed and PBIT GO is displayed when BIT is complete. Ground safety handles rotate to LOCKED (stations with hooks closed).  On the left DDI, ARM is displayed.
16.	On the MC/HYD ISOL control panel, position the MC switch to 1 OFF for 5 seconds, then to NORM.	
<b>NOTE</b> (If applicable) Perform Steps 17 through 30 from rear cockpit.		
17.	On the right advisory and threat warning indicator panel, select A/A.	A/A light comes on.
18.	On the right advisory and threat warning indicator panel, select A/G.	A/G light comes on and A/A light goes off.
19.	On the right advisory and threat warning indicator panel, deselect A/G.	A/G light goes off.

## Release and Control System Checks

Table 4-21. MIL-STD-1760 Weapons/Stores Interface System Check (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
20.	On the right DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	On the right DDI, BIT control display appears.  On the right DDI, maintenance BIT format is displayed.
21.	On the right DDI, press and release the BIT pushbutton.	
22.	On the right DDI, press and release the STORES pushbutton.	
<b>NOTE</b>		
Right DDI displays NA for SEL JETT, PICKLE, STATION SEL, AUX RELEASE, COOLANT and WEAPON SEL.		
23.	On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, MAINT is boxed, SMS IN TEST is displayed and ETET pushbutton option appears and the following switch test labels are displayed below SMS; SEL JETT, PICKLE, ATRIG, STATION SEL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON SEL, UNDESIGNATE, HARM SEQ.
24.	On the left and right hand controller, press the sensor control switch left, right, forward, aft and center press.	GO appears after CASTLE.
25.	On the left and right hand controller, press and release the multifunction switch down and release.	GO appears after RAID/FLIR.
26.	On the left and right hand controller, press and release the multifunction switch aft and release.	GO appears after UNCAGE.
27.	On the left and right hand controllers, press and release the UNDESIGNATE switch.	GO appears after UNDESIGNATE.
28.	On the left and right hand controller, press and release the multifunction switch forward and release.	GO appears after HARM SEQ.
29.	On the right hand controller, press and release the trigger.	GO appears after ATRIG.
30.	On the right DDI, press and release the BIT pushbutton.	On the right DDI, BIT control display appears.
31.	(Cockpit) On the master mode control panel, select A/A.	The A/A light comes on.
32.	On the master mode control panel, select A/G.	A/G light comes on and the A/A light goes off.
33.	On the master mode control panel, deselect A/G.	A/G light goes off.
34.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	On the left DDI, wingform display appears.
35.	On the left DDI, press the STORES pushbutton.	
36.	On the right DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
37.	On the right DDI, press and release the BIT pushbutton.	On the right DDI, STORES BIT display appears.
38.	On the right DDI, press and release the STORES pushbutton.	



**Table 4-21. MIL-STD-1760 Weapons/Stores Interface System Check (SMUG) (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
39.	On the right DDI, press and release the SMS MAINT pushbutton option.	On the right DDI, maintenance BIT format is displayed.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Right DDI, displays NA for HARM SEQ.</p>		
40.	On the right DDI, press and release the MAINT BIT pushbutton.	On the right DDI, MAINT is boxed, SMS IN TEST is displayed and ETET pushbutton option appears and the following switch test labels are displayed below SMS; SEL JETT, PICKLE, ATRIG, STATION SEL, AUX RELEASE, CASTLE, COOLANT, RAID/FLIR, UNCAGE, WEAPON SEL, UNDESIGNATE, HARM SEQ.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">No test step or display is required for UNDESIGNATE.</p>		
41.	On the left vertical control panel, position the SELECT JETT switch as follows: LFUS MSL, RFUS MSL, RACK LCHR, STORES, SAFE then press and release JETT.	GO appears after SEL JETT.
42.	On the aircraft controller grip, press and release the bomb button.	GO appears after PICKLE.
43.	On the aircraft controller grip, press and release the trigger.	GO appears after TRIGGER.
44.	On the flaps, landing gear and stores indicator panel, select the CTR, LI, RI, LO and RO station select switches.	GO appears after STATION SEL and station select lights come on.
45.	Deselect the CTR, LI, RI, LO and RO station select switches.	Station select lights go off.
46.	On the ECM control panel, position the AUX REL switch to ENABLE.	GO appears after AUX RELEASE.
47.	On the aircraft controller grip, press the sensor control switch left, right, forward, aft and center press.	GO appears after CASTLE.
48.	On the map gain control panel, position the IR COOL switch to NORM, ORIDE then OFF.	GO appears after COOLANT.
49.	On the left throttle grip, press and release the RAID/FLIR switch.	GO appears after RAID/FLIR.
50.	On the right throttle grip, press and release the cage/uncage switch.	GO appears after UNCAGE.
51.	On the aircraft controller grip, position the weapon select switch to aft, forward, down and then right.	GO appears after WEAPON SEL.

## Release and Control System Checks

Table 4-21. MIL-STD-1760 Weapons/Stores Interface System Check (SMUG) (Continued)

CHECK STEP	PROCEDURES	RESULT
<p align="center"><b>NOTE</b></p> <p>During the following procedures, each video display format must have straight grid lines, no vertical roll, no horizontal tearing.</p>		
52.	On the right DDI, press and release the ETET pushbutton option.	On the left DDI, AW 96 is boxed and TEST is displayed for the station under test in the wingform.  On the right DDI, AWM-96 audio test format is displayed and audio tone is heard in the headset.
53.	On the right DDI, press and release PASS.	Audio test format is removed and video displayed.
54.	On the right DDI, press and release PASS.	Video format is removed from the right DDI and displayed on the left DDI.
55.	On the left DDI, press and release PASS.	Video format is removed from the left DDI and displayed on the MPCD.
56.	On the MPCD, press and release PASS.	Video format is removed from the MPCD and displayed on the right DDI.
57.	On the right DDI, press and release PASS.	Video format is removed from the right DDI and displayed on the left DDI.
58.	On the left DDI, press and release PASS.	Video format is removed from the left DDI and displayed on the MPCD.
<p align="center"><b>NOTE</b></p> <p>The right DDI emergency jettison test will automatically fail if PUSH TO JETT (Step 60) is not completed within 10 seconds after jettison format is displayed.</p>		
59.	On the MPCD, press and release PASS.	Video format is removed from the MPCD and the right DDI displays EMJETT TEST, PUSH/HOLD EMERG JETT SWITCH.
60.	On the master arm control panel, press and hold the EMERG JETT, PUSH TO JETT switch until emergency jettison format is removed from the right DDI.	On the right DDI, AWM-96 TEST IN PROGRESS is displayed, then; TEST RESULTS, STATION FAILS, RETEST and NEXT. Ground safety handles on all pylon stations with hooks closed, go to UNLOCKED and disconnected.
61.	On the right DDI, if no failures have occurred, press and release NEXT.	On the left DDI, IN TEST is removed.
62.	Rotate all BRU-32 ground safety handles on stations with hooks closed towards the LOCKED position.	
63.	Position the test set AC switch to OFF.	Test set POWER light go off.
64.	On the ECM control panel, position the AUX REL switch to NORM.	

**Table 4-21. MIL-STD-1760 Weapons/Stores Interface System Check (SMUG) (Continued)**

CHECK STEP	PROCEDURES	RESULT
<div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: 150px;">CAUTION</div> <p style="text-align: center;">Do not press the detent button on the ground safety handles.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">When rotating the ground safety handles, the handles will not go completely to LOCKED.</p>		
65.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from the display and SAFE appears.
66.	On the GND PWR control panel, position switch 3 to AUTO.	
67.	(If applicable) Disconnect and transfer the AWM-96 test set to the next station being checked.	
68.	(If applicable) On the master arm control panel, position the MASTER switch to ARM.	
69.	(If applicable) In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
70.	(If applicable) On the test set, position the AC switch to ON.	All POWER lights come on.
71.	(If applicable) On the test set, press and release RESET.	
72.	(If applicable) On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	Ground safety handles rotate to LOCKED (stations with hooks closed).
73.	(If applicable) On the MC/HYD ISOL control panel, position the MC switch to 1 OFF for 5 seconds, then to NORM.	
74.	(If applicable) On the ECM control panel, position the AUX REL switch to ENABLE.	
75.	(If applicable) Repeat Steps 34 thru 40 and 52 thru 66 for remaining stations being checked.	
76.	On the GND PWR control panel, position and hold switch 3 to B ON for 3 seconds.	Ground safety handles rotate to LOCKED (stations with hooks closed).
77.	Position the left, right and center displays to OFF.	
78.	Position the up front control OFF/BRT switch to OFF.	Display areas off.
79.	On the GND PWR control panel, position the EXT PWR switch to OFF.	Display areas off.
80.	Disconnect/remove test set equipment.	
81.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**4-37. M61 GUN FIRING SYSTEM CHECK.**

4-38. The following procedures are used to check the M61 gun firing system.

1. Test Equipment Required.
  - a. (As applicable) A/E 24T-230 Gun test set.
  - b. (As applicable) 77 B/N Digital Multimeter or equivalent.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).

**CAUTION**

Do not rotate the gun system with the anti-jam pin pulled and locked.

- b. Ensure the anti-jam pin is disengaged (NOT pulled and locked).

**WARNING**

Do not attempt to rotate the system by hand or powerpack if the aircraft hydraulic system is pressurized.

- c. Pull the hydraulic manual control to release residual hydraulic pressure.

**WARNING**

Do not rotate or operate the gun system without ensuring that the manual clearing handle is in the clear position.

**CAUTION**

Do not rotate the handcrank counterclockwise; reverse rotation will damage the gun system.

- d. Rotate the handcrank clockwise until 12 elements pass through the aircraft adapter.
- e. Pull and lock the anti-jam pin.
- f. (If applicable) Connect gun test set to gun firing receptacle.
- g. On F/A-18A-D (non SMUG), if FULL is not displayed on the gun encoder-decoder, press the reset button.

- h. On F/A-18C/D (SMUG), set rounds count on Weapons Insertion Panel.
- i. Connect electrical power to aircraft.
- j. (If applicable) Apply cooling.

<b>WARNING</b>
----------------

Prior to applying power, the cockpit switches and controls must be ready to receive power.

k. On the GND PWR control panel position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds.

l. Proceed to M61 Gun Firing System Check with A/E-24T-230 test set (Table 4-22) or with 77B/N multimeter (Table 4-23).

**Table 4-22. M61 Gun Firing System Check (Test Set)**

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
3.	On the left DDI, press the BIT pushbutton.	
4.	On the master arm control panel, select A/G.	
5.	On the left DDI, press and release the MENU pushbutton option until the STORES option is displayed.	(10A and 12A) SMS GO is displayed when BIT complete.
6.	On the left DDI, press the STORES pushbutton.	(91C/13C/15C and 17C) PBIT GO is displayed below STORES when BIT is complete.
7.	On the left DDI, press the GUN pushbutton.	A/G light comes on; all test set lights remain off.
8.	On the left DDI, press the MAN pushbutton.	SAFE is on, with 578 in wingform display for gun.
9.	On the left DDI, press the LO pushbutton.	
10.	On the master arm control panel, position the MASTER switch to ARM.	
11.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	Box appears around weapon select GUN with X through it.
		Box appears around MAN.
		Box appears around LO.
		SAFE is removed from the display and ARM appears. X is removed from weapon select GUN and RDY appears.

## Release and Control System Checks

Table 4-22. M61 Gun Firing System Check (Test Set) (Continued)

CHECK STEP	PROCEDURES	RESULT
12.	Press and hold the trigger.	Test set 28V light is on and 0V (300 V) is on.
13.	On test set press and release LAMP TEST.	Test set 0V, 28V, and 300V lights come on, then go off.
14.	Release the trigger.	Test set lights go off.
<div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"><b>WARNING</b></div> <p>The test set 0 volts (28 volts) (red) light must remain off for the remainder of the check or stray voltage is present.</p>		
15.	Push the gun electrical safety switch in, turn clockwise and release.	
16.	Press and hold the trigger.	Test set 28V and 300V lights come on.
17.	Release the trigger.	Test set lights go off.
18.	On the aircraft controller grip, select the gun with the AIR to AIR weapon select switch.	A/G light goes off and A/A light comes on, box appears around HI, box is removed from LO and MAN and GUN removed. A/A display appears.
19.	Press and hold the trigger.	Test set 28V and 300V lights are on.
20.	Release the trigger.	Test set lights are off.
21.	Set the gun electrical safety switch to the SAFE (extended) position.	
22.	Press and hold the trigger.	Test set 28V and 0V (300V) lights are on.
23.	Release the trigger.	Test set lights are off.
24.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
25.	On the master arm control panel, deselect A/A.	A/A light is off. Box with X appears around GUN.
26.	On the DDI, deselect the GUN.	Box and X are removed from GUN.
27.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
28.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
29.	Disconnect/remove test equipment.	
30.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**Table 4-23. M61 Gun Firing System Check**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.  (10A and 12A) SMS GO is displayed when BIT complete. (91C/13C/15C and 17C) PBIT GO is displayed below STORES when BIT is complete.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	
3.	On the left DDI, press the BIT pushbutton.	
4.	On the master arm control panel, select A/G.	A/G light comes on.
5.	On the left DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.	
6.	On the left DDI, press the STORES pushbutton.	SAFE is on with 578 in wingform display for gun.
7.	On the left DDI, press the GUN pushbutton.	Box appears around weapon select GUN with X through it.
8.	On the left DDI, press the MAN pushbutton.	Box appears around MAN.
9.	On the left DDI, press the LO pushbutton.	Box appears around LO.
10.	On the master arm control panel, position the MASTER switch to ARM.	
11.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	SAFE is removed from the display and ARM appears. X is removed from weapon select GUN and RDY appears.
12.	Connect the multimeter between pins Y (-) and N(+).	

**WARNING**

High voltage is present at the gun electrical connector for remainder of check.

**NOTE**

Multimeter will be set to the proper scale to read the required dc voltage.

13.	Press and hold the trigger.	Meter indicates 0 volts.
14.	Push the gun electrical safety switch in, turn clockwise and release.	Meter indicates 240 - 290 volts dc.
15.	Release the trigger.	Voltage remains momentarily, then meter indicates 0 volts.
16.	Connect the multimeter between pins T (-) and A (+).	
17.	Press and hold the trigger.	Meter indicates 21 - 28.5 volts dc.
18.	Release the trigger.	Meter indicates 0 volts.
19.	On the aircraft controller grip, select the gun, with the AIR to AIR weapon select switch.	A/G light goes off and A/A light comes on, box appears around HI, box is removed from LO and MAN, and GUN removed. A/A display appears.

## Release and Control System Checks

Table 4-23. M61 Gun Firing System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
20.	Press and hold the trigger.	Meter indicates 21 - 28.5 volts dc.
21.	Release the trigger.	Meter indicates 0 volts.
22.	Connect the multimeter between pins Y (-) and N (+).	
23.	Press and hold the trigger.	Meter indicates 240 - 290 volts dc.
24.	Release the trigger.	Voltage remains momentarily, then meter indicates 0 volts.
25.	Disconnect/remove test equipment.	
26.	Set the gun electrical safety switch to the SAFE (extended) position.	
27.	On the master arm control panel, position the MASTER switch to SAFE.	ARM is removed from display and SAFE appears.
28.	On the master arm control panel, deselect A/A.	A/A light off. Box with X appears around GUN.
29.	On the DDI, deselect the GUN.	Box and X are removed from GUN.
30.	Position the left and right DDI power switches to OFF.	Indicator display areas off.
31.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
32.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**4-39. AN/ALE-39 COUNTERMEASURES DISPENSER SYSTEM CHECK.**

4-40. The following procedures are used to check the AN/ALE-39 Countermeasures Dispenser System.

1. Test Equipment Required.
  - a. AN/ALM-225 or AN/ALM-291 Countermeasures Dispenser Test Set.
  - b. Proximity switch control.
2. Technical Directives Required.
  - a. SEC 5602
  - b. AVC 5149
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).



**NOTE**

AN/ALM-291 can only be used on aircraft that have AVC 5149 incorporated. Setup and test procedures remain the same.

- b. Connect the test set as follows:
  - (1) Remove cover from the test set.
  - (2) Position the SELECT switch to SAFE ENERGY.
  - (3) Press and hold the PUSH to TEST button and adjust the ENERGY CAL ADJ control until the needle on the HAZARD/SAFE METER is at the CAL position.
  - (4) Release the PUSH to TEST button and replace the cover on the test set.
  - (5) Position the SELECT switch to END TO END.
  - (6) Install the test set in the left dispenser housing so that J4 on the test set mates with the plug in the dispenser housing.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- c. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- d. Position the AN/ALE-39 Programmer switches as follows:
  - (1) CHAFF B QTY to 4
  - (2) CHAFF B INTV to .5
  - (3) CHAFF S QTY to 2
  - (4) CHAFF S INTV to 2
  - (5) FLARE QTY to 10
  - (6) FLARE INTV to 2
  - (7) JAMMER QTY to 4
  - (8) JAMMER INTV to 001
  - (9) LOAD L10 to C
  - (10) LOAD L20 to F
  - (11) LOAD R10 to J
  - (12) LOAD R20 to F

**Release and Control System Checks**

e. On the ECM control panel, position counters as follows:

- (1) CHAFF to 10
- (2) FLARE to 40
- (3) JAMMER to 10

f. Connect electrical power to aircraft.

g. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

h. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switch 3 to A ON for 3 seconds.

i. Proceed to AN/ALE-39 Countermeasures Dispenser System Check, (Table 4-24).

**Table 4-24. AN/ALE-39 Countermeasures Dispenser System Check**

CHECK STEP	PROCEDURES	RESULT
<b>NOTE</b> F/A-18A-D 161353 thru 163782, perform Steps 1 thru 3. F/A-18C/D 163985 thru 164980, proceed to Step 4.		
1.	Position the proximity switch control RIGHT and NOSE GEAR switches to WT OFF WHLS.	
2.	On the master arm control panel, position the MASTER switch to ARM.	
3.	In the nose wheelwell, position the ARMAMENT OVERRIDE switch to OVERRIDE.	
<b>NOTE</b> F/A-18A-D 161353 thru 163782, proceed to Step 6.		
4.	Position the proximity switch control, LEFT, RIGHT and NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
5.	Push the ICM electrical safety switch in, turn clockwise and release.	
6.	On the ECM control panel, position the DISPENSER switch to C.	

**Table 4-24. AN/ALE-39 Countermeasures Dispenser System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
NOTE		
Failure to hold RESET switch in RESET for at least 5 seconds may result in abnormal indications.		
7.	On the programmer, pull the RESET switch and set to RESET for a minimum of 5 seconds.	Test set light 1 flashes. On the ECM control panel, the CHAFF counter steps to 9.
8.	On the right engine throttle grip, push the chaff/flare switch forward and release.	
9.	On the ECM control panel, set the MODE SEL switch to PRGM.	
10.	On the ECM control panel, press and release the DISP switch.	Test set lights 2 thru 5 flash in sequence at .5 second interval, followed after 2 seconds by lights 6 through 9 flashing in sequence at .5 second interval. On the ECM control panel, the CHAFF counter steps to 1.
11.	On the ECM control panel, position the MODE SEL switch to SNGL.	
12.	Above the left console, press and release the canopy ledge DISP switch.	Test set light 10 flashes. On the ECM control panel, the CHAFF counter steps to 0.
NOTE		
F/A-18A/B/C and F/A-18D 163434 thru 163778, proceed to Step 30.		
F/A-18D 163986 thru 164967, perform Steps 13 thru 27 in the rear cockpit.		
13.	On the programmer, pull the RESET switch and set to the RESET position for a minimum of 5 seconds.	Test set light 1 flashes. On the ECM control panel, the CHAFF counter steps to 9.
14.	On the ECM control panel, set the CHAFF counter to 10.	
15.	On the chaff/flare handle assembly, push the rear upper left CHAFF/FLARE/DISP switch to CHAFF and release.	
16.	On the chaff/flare handle assembly, push the rear upper left CHAFF/FLARE/DISP switch to the outboard DISP position (left) and release.	Test set light 2 flashes. On the ECM control panel, the CHAFF counter steps to 8.
17.	On the chaff/flare handle assembly, push the rear upper left CHAFF/FLARE/DISP switch to the inboard DISP position (right) and release.	Test set light 3 flashes. On the ECM control panel, the CHAFF counter steps to 7.
18.	On the chaff/flare handle assembly, push the rear upper left CHAFF/FLARE/DISP switch to the FLARE position and release.	Test set light 11 flashes. On the ECM control panel, the FLARE counter steps to 38.
19.	On the chaff/flare handle assembly, push the rear upper right CHAFF/FLARE/DISP switch to the CHAFF position and release.	Test set light 4 flashes. On the ECM control panel, the CHAFF counter steps to 6.
20.	On the chaff/flare handle assembly, push the rear upper right CHAFF/FLARE/DISP switch to the inboard DISP position (left) and release.	Test set light 5 flashes. On the ECM control panel, the CHAFF counter steps to 5.

## Release and Control System Checks

Table 4-24. AN/ALE-39 Countermeasures Dispenser System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
21.	On the chaff/flare handle assembly, push the rear upper right CHAFF/FLARE/DISP switch to the outboard DISP position (right) and release.	Test set, light 6 flashes. On the ECM control panel, the CHAFF counter steps to 4.
22.	On the chaff/flare handle assembly, push the rear upper right CHAFF/FLARE/DISP switch to the FLARE position and release.	Test set light 12 flashes. On the ECM control panel, the FLARE counter steps to 36.
23.	In the rear cockpit above the left console, press and release the canopy ledge DISP switch.	Test set light 7 flashes. On the ECM control panel, the CHAFF counter steps to 3.
<b>NOTE</b>		
F/A-18D 163986 thru 164967, NIGHT ATTACK CONFIGURATION, proceed with Steps 24 thru 27.		
F/A-18D 163986 thru 164967, TRAINER CONFIGURATION, proceed to Step 28.		
24.	On the left hand controller, push the ECM dispense switch forward and release.	Test set light 8 flashes. On the ECM control panel, the CHAFF counter steps to 2.
25.	On the left hand controller, push the ECM dispense switch aft and release.	Test set light 9 flashes. On the ECM control panel, the CHAFF counter steps to 1.
26.	On the right hand controller, push the ECM chaff/flare dispenser switch forward and release.	Test set light 10 flashes. On the ECM control panel, the CHAFF counter steps to 0.
27.	On the right hand controller, push the ECM chaff/flare dispenser switch aft and release.	Test set light 13 flashes. On the ECM control panel, the FLARE counter steps to 34.
28.	On the programmer, pull the RESET switch and set to RESET for a minimum of 5 seconds.	
29.	(If applicable) On the ECM control panel, set FLARE counters to 40.	
30.	On the ECM control panel, position the MODE SEL switch to PRGM.	
31.	On the ECM control panel, position the DISPENSER switch to F/M.	
32.	Press and release the canopy ledge DISP switch.	Test set lights 11 thru 20 flash. On the ECM control panel, the FLARE counter steps to 20.
33.	On the ECM control panel, position the MODE SEL switch to SNGL.	
34.	On the ECM control panel, press and release the DISP switch.	Test set light 21 flashes. On the ECM control panel, the FLARE counter steps to 18.
35.	On the right throttle grip, push the chaff/flare switch aft and release.	Test set light 22 flashes. On the ECM control panel, the FLARE counter steps to 16.
36.	On the ECM control panel, position the DISPENSER switch to F/S.	
37.	On the ECM control panel, press and release the DISP switch.	Test set light 23 flashes. On the ECM control panel, the FLARE counter steps to 15.
38.	(F/A-18A-D 161353 thru 163782) Position the RIGHT and NOSE GEAR switches to NORM.	

**Table 4-24. AN/ALE-39 Countermeasures Dispenser System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
39.	(F/A-18C/D 163985 thru 164980) Position the LEFT, RIGHT, NOSE GEAR and the GEAR UPLOCK switches to NORM.	No test set lights flash. On the ECM control panel, the FLARE counter remains at 15.
40.	On the ECM control panel, press and release the DISP switch 2 times.	
<div>NOTE</div> <div>F/A-18A-D 161353 thru 163782, perform Steps 41 and 42.</div> <div>F/A-18C/D 163985 thru 164980, proceed to Step 43.</div>		
41.	Position the proximity switch control RIGHT and NOSE GEAR switches to WT OFF WHLS.	
42.	On the master arm control panel, position the MASTER switch to SAFE.	
<div>NOTE</div> <div>F/A-18A-D 161353 thru 163782, proceed to Step 45.</div>		
43.	Position the LEFT, RIGHT, NOSE GEAR switches to WT OFF WHLS and GEAR UPLOCK switch to UP.	No test set lights flash. On the ECM control panel, the FLARE counter remains at 15.
44.	Set ICM electrical safety switch to the SAFE (extended) position.	
45.	On the ECM control panel, press and release the DISP switch 2 times.	
46.	(F/A-18C/D 163985 thru 164980) Push the ICM electrical safety switch in, turn clockwise and release.	
<div>NOTE</div> <div>F/A-18A-D 161353 thru 163782, perform Steps 47 and 48.</div> <div>F/A-18C/D 163985 thru 164980, proceed to Step 49.</div>		
47.	On the master arm control panel, position the MASTER switch to ARM.	Test set remaining lights flash in sequence. On the ECM control panel, the FLARE counter steps to 0.
48.	In the nose wheelwell, position the ARMAMENT OVERRIDE to OVERRIDE.	
49.	On the ECM control panel, position the DISPENSER switch to S/F PULL.	
50.	On the ECM control panel, position the DISPENSER switch to J.	
51.	On the programmer, pull the RESET switch and hold to the RESET position for a minimum of 5 seconds.	
52.	On the test set, position the SELECT switch to SAFE ENERGY.	Test set HAZARD/SAFE meter indicates in the green area.
53.	On the test set, press and release the PUSH TO TEST button.	

## Release and Control System Checks

Table 4-24. AN/ALE-39 Countermeasures Dispenser System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
54.	Remove the test set from the left dispenser housing and install in the right dispenser housing so that J4 on the test set mates with the dispenser housing plug.	Test set lights 1 thru 4 flash in sequence at .5 second intervals. On the ECM control panel, the JAMMER counter steps to 6.
55.	On the test set, position the SELECT switch to END TO END.	
56.	On the ECM control panel, position the MODE SEL switch to PRGM.	
57.	On the ECM control panel, press and release the DISP switch.	
58.	On the ECM control panel, position the MODE SEL switch to SNGL.	Test set lights 5 thru 10 flash in sequence. On the ECM control panel, the JAMMER counter steps to 0.
59.	On the ECM control panel, press and release the DISP switch 6 times.	
60.	(F/A-18C/D 163985 and up) Position the ICM electrical safety switch to SAFE (extended).	(F/A-18A-D 161353 thru 163782) On the test set, the remaining lights flash.
61.	On the ECM control panel, position the DISPENSER switch to S/F PULL.	
62.	(F/A-18C/D 163985 and up) Push the ICM electrical safety switch in turn clockwise and release.	No test set lights flash.
63.	(F/A-18C/D 163985 and up) Dispenser switch to OFF, then S/F PULL.	Test set remaining lights flash.
64.	On the ECM control panel, position the DISPENSER switch to C.	Test set HAZARD/SAFE meter indicates in the green area.
65.	On the programmer, pull the RESET switch and hold to the RESET position for a minimum of 5 seconds.	
66.	On the test set, position the SELECT switch to SAFE ENERGY.	
67.	On the test set, press and release the PUSH TO TEST button.	
68.	On the ECM control panel, position the DISPENSER switch to OFF.	
69.	On the ECM control panel, position the MODE SEL switch to STBY.	

**Table 4-24. AN/ALE-39 Countermeasures Dispenser System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b>  F/A-18A-D 161353 thru 163782, perform Steps 70 and 71.  F/A-18C/D 163985 thru 164980, proceed to Step 72.</p>		
70.	On the master arm control panel, position the MASTER switch to SAFE.	
71.	Position the proximity switch control RIGHT and NOSE GEAR switches to NORM.	
<p style="text-align: center;"><b>NOTE</b>  F/A-18A-D 161353 thru 163782, proceed to Step 74.</p>		
72.	Set the ICM electrical safety switch to the SAFE (extended) position.	
73.	Position the proximity switch control LEFT, RIGHT, NOSE GEAR and the GEAR UPLOCK switches to NORM.	
74.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
75.	Disconnect and remove test equipment.	
76.	If no other procedures are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

#### **4-41. AN/ALE-47 INTEGRATED COUNTERMEASURES DISPENSER (ICMD) SYSTEM CHECK.**

4-42. The following procedures are used to check the AN/ALE-47 Countermeasures Dispenser System.

1. Test Equipment Required.
  - a. AN/ALM-286 Countermeasures Dispenser Test Set.
  - b. Proximity switch control.
2. Technical Directives Required.
  - a. None.
3. Check Preparation.
  - a. Complete aircraft preparation procedures (Paragraph 4-9).

**Release and Control System Checks**

b. Connect the test set as follows:

- (1) Open test set and remove both Stray Voltage Flight Line Payload Simulators (SV/FLPS).
- (2) Ensure that both SV/FLPS are not damaged.
- (3) Position both operating mode switches to STRAY VOLTAGE TEST.
- (4) Press and hold both display control switches to the SV TEST position.

**NOTE**

The lack of a green LED indication or a white F displayed on the sv/counter indicates the SV/FLPS batteries have failed.

(5) Verify BATT INDICATOR LED is green and a white S is displayed on the sv/counter display.

- (6) Release both display control switches.
- (7) Return both operating mode switches to FLPS OFF.
- (8) Ensure that both MAG ID, SW1 payload coding switches are set to 1.
- (9) Ensure that both MAG ID, SW2 payload coding switches are set to A.

**CAUTION**

Ensure the 48 pin connector is aligned prior to installing the FLPS.

- (10) Install SV/FLPS in each of the forward dispenser housings.

**WARNING**

Do not connect the proximity switch control to the aircraft with the aircraft launch bar in the down position.

- c. Connect the proximity switch control to 52J-G040 PROX SW TEST RECP in nose wheelwell.
- d. Connect electrical power to aircraft.
- e. (If applicable) Apply cooling.



**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

f. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds.

**NOTE**

If the FUEL panel probe switch is in any position other than RETRACT, dispense switch Memory Inspect data will not be as indicated during check.

g. Ensure FUEL panel probe switch is in RETRACT position.

h. Proceed to AN/ALE-47 Countermeasures Dispenser System Check (Table 4-25).

**Table 4-25. AN/ALE-47 Countermeasures Dispenser System Check**

CHECK STEP	PROCEDURES	RESULT
1.	Position the left and right DDI power switches to DAY.	After warm-up, indicator display areas appear.
2.	On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.	On the left DDI, the MENU display appears.
3.	On the left DDI, press and release the BIT pushbutton.	On the left DDI, the BIT control display appears with NOT RDY displayed below EW.
4.	On the left DDI, press and release EW pushbutton.	On the left DDI, the EW BIT display appears with ALE-47 NOT RDY.
5.	(If installed) On the control indicator panel, press and release POWER ON ALR-67 indicator switch.	
<b>NOTE</b> If ALR-67 is not installed or is not functional, Step 6 will indicate DEGD vice PBIT GO.		
6.	On the integrated countermeasures control panel, position the DISPENSER switch to ON.	On the left DDI, SF TEST will be displayed below EW for 5 seconds then change to PBIT GO when power-up BIT is complete.
7.	On the right DDI, press and release the MENU pushbutton until the EW pushbutton option is displayed.	
8.	On the right DDI, press the EW pushbutton.	On the right DDI, the EW display appears.
9.	On the right DDI, press the ALE-47 pushbutton.	On the right DDI, the ALE-47 display appears with ALE-47 boxed and the following inventories; C 14, F 18, O1 14 and O2 14.

## Release and Control System Checks

Table 4-25. AN/ALE-47 Countermeasures Dispenser System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
10.	On the right DDI, press the ARM pushbutton.	On the right DDI, the ARM menu appears.
11.	On the right DDI, select the CHAF, FLAR, OTH1 and OTH2 pushbuttons.	On the right DDI, CHAF, FLAR, OTH1 and OTH2 are boxed.
12.	On the right DDI, press the RTN pushbutton option.	On the right DDI, the top level ALE-47 display appears.
13.	On the right DDI, press the MODE pushbutton.	On the right DDI, the MODE menu display appears.
14.	On the right DDI, press the manual program pushbutton option until PROG 1 is displayed.	On the right DDI, PROG 1 is displayed.
15.	On the right DDI, press the MAN pushbutton.	On the right DDI, MAN is displayed below ALE-47 with the following inventories: C 14, F 18, O1 14 and O2 14.
16.	On the proximity switch control, position the LEFT, RIGHT and NOSE GEAR switches to WT OFF WHLS and the GEAR UPLOCK switch to UP.	
17.	Position the ICM electrical safety switch to the ARM (flush) position.	
<b>NOTE</b>		
Inventory display must maintain payloads in all categories to perform check.		
Inventories will decrement and Bingo levels (indicated by a line through the payload inventory) will be set as determined by system software.		
<b>NOTE</b>		
To reload the inventory if any category reaches zero, the aircraft must be weight on wheels, EXT PWR - OFF, then EXT PWR - RESET, switches 1, 2, 3, 4 - B ON. On the right DDI, select the load option off the ALE-47 program sublevel. Once inventories are reestablished, place switch 4 - AUTO.		
18.	On the SV/FLPS, position both operating mode switches to FLPS/COUNT.	Both SV/FLPS BAT indicators are green.
19.	On the right throttle grip, push the chaff/flare switch aft and release.	On the right DDI, the inventory decrements.
<b>NOTE</b>		
(13C/15C) Proceed to Step 21.		
20.	(17C) On the right throttle grip, push the chaff/flare switch forward and release.	On the right DDI, the inventory decrements.
<b>NOTE</b>		
(17C) Proceed to Step 26.		
<b>NOTE</b>		
(13C/15C) Throttle grip dispense switch forward position must be verified with Memory Inspect.		

**Table 4-25. AN/ALE-47 Countermeasures Dispenser System Check (Continued)**

<b>CHECK STEP</b>	<b>PROCEDURES</b>	<b>RESULT</b>
21.	On the left DDI, press the MI pushbutton option.	On the left DDI, ADDR and DATA legends are displayed. On the up front control display, UNIT and ADR options are displayed.
22.	On the up front control display, press the UNIT option, then the keyboard options 28 and ENT.	On the left DDI, unit code 28 is displayed.
23.	On the up front control display, press the ADR option, then the keyboard options 7023026 and ENT.	On the left DDI, Memory Inspect address 7023026 and data readout 20400 are displayed.
24.	On the right throttle grip, push and hold the chaff/flare switch to the forward position.	On the left DDI, the data readout changes to 30400.
25.	On the right throttle grip, release the chaff/flare switch.	On the right DDI, the data readout returns to 20400.
26.	On the left console, press and release the canopy ledge DISP switch.	On the right DDI, the inventory decrements.
<p style="text-align: center;"><b>NOTE</b>  Make note of inventories prior to performing Step 27.</p>		
27.	On the ECM control panel, position the DISPENSER switch to BYPASS.	On the right DDI, the ALE-47 RDY indication has a dash through it. On the left DDI, NOT RDY is displayed for ALE-47.
28.	Above the left canopy console, press and release the canopy ledge DISP switch.	
29.	On the ECM control panel, position the DISPENSER switch to ON.	On the left DDI, PBIT GO displayed when BIT complete. On the right DDI, inventory decrements.
<p style="text-align: center;"><b>NOTE</b>  For F/A-18C proceed to Step 47. F/A-18D continue with Steps 30 through 46, in the rear cockpit.</p>		
30.	Press and release the rear cockpit canopy ledge DISP switch.	On the right DDI, the inventory decrements.
<p style="text-align: center;"><b>NOTE</b>  (13C/15C) Chaff/flare handle assemblies dispense switches up position must be verified with Memory Inspect.</p>		
<p style="text-align: center;"><b>NOTE</b>  (17C) Continue from Step 32.</p>		
31.	On the left DDI, press down arrow pushbutton (15C) two times (13C) four times.	On the left DDI, Memory Inspect ADDR (15C) 7023024 (13C) 7036427 and data readout 00377 are displayed.
32.	On the chaff/flare handle assembly, push the left CHAFF/FLARE/DISP switch to the up position and hold.	On the left DDI, data readout changes to 00367. (17C) On the right DDI, inventory decrements.

## Release and Control System Checks

Table 4-25. AN/ALE-47 Countermeasures Dispenser System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
33.	On the chaff/flare handle assembly, release the left CHAFF/FLARE/DISP switch.	On the left DDI, data readout changes back to 00377.
34.	On the chaff/flare handle assembly, push the right CHAFF/FLARE/DISP switch to the up position.	On the left DDI, data readout changes to 00367. (17C) On the right DDI, inventory decrements.
35.	On the chaff/flare handle assembly, release the right CHAFF/FLARE/DISP switch.	On the left DDI, data readout returns to 00377.
36.	On the chaff/flare handle assembly, push the left CHAFF/FLARE/DISP switch to the down position and release.	On the right DDI, the inventory decrements.
37.	On the chaff/flare handle assembly, push the left CHAFF/FLARE/DISP switch to the left position and release.	On the right DDI, the inventory decrements.
38.	On the chaff/flare handle assembly, push the left CHAFF/FLARE/DISP switch to the right position and release.	On the right DDI, the inventory decrements.
39.	On the chaff/flare handle assembly, push the right CHAFF/FLARE/DISP switch to the down position and release.	On the right DDI, the inventory decrements.
40.	On the chaff/flare handle assembly, push the CHAFF/FLARE/DISP switch to the left position and release.	On the right DDI, the inventory decrements.
41.	On the chaff/flare handle assembly, push the right CHAFF/FLARE/DISP switch to the right position and release.	On the right DDI, the inventory decrements.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">F/A-18D Trainer proceed to Step 47. F/A-18D Night Attack continue with Step 42.</p>		
42.	On the left hand controller, push the ECM chaff/flare dispense switch forward and release.	On the right DDI, the inventory decrements.
43.	On the left hand controller, push the ECM chaff/flare dispense switch aft and release.	On the right DDI, the inventory decrements.
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">(13C/15C) Right hand controller dispense switch forward must be verified with Memory Inspect.</p>		
44.	On the right hand controller, push the ECM chaff/flare dispense switch forward and hold.	On the left DDI, data readout changes to 00277. (17C) On the right DDI, the inventory decrements.
45.	On the right hand controller, release the ECM chaff/flare dispense switch.	On the left DDI, data readout returns to 00377.
46.	On the right hand controller, push the ECM chaff/flare dispense switch aft and release.	On the right DDI, the inventory decrements.

**Table 4-25. AN/ALE-47 Countermeasures Dispenser System Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
47.	Position the ICM electrical safety switch to the SAFE (extended) position.	On the right DDI, the inventories do not change.
48.	On the right throttle grip, push the chaff/flare switch to the aft position and release.	
49.	Position the ICM electrical safety switch to the ARM (flush) position.	
50.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR and GEAR UPLOCK to NORM.	On the right DDI, the inventories do not change.
51.	On the right throttle grip, push the chaff/flare switch aft and release.	
52.	On the proximity switch control, position the LEFT, RIGHT and NOSE GEAR to WT OFF WHLS and the GEAR UPLOCK to UP.	
<b>NOTE</b>		
When the JETT SEL switch is pressed and released, software determines what will be jettisoned, F inventory must go to 0, other inventories may go to 0.		
53.	On the integrated countermeasures control panel, press and release the ECM JETT JETT SEL switch.	On the integrated countermeasures control panel, the JETT SEL switch light comes on and remains on. On the right DDI, the flare inventory quantity (F) is 0 with an X through it.
54.	On the proximity switch control, position the GEAR UPLOCK to NORM, then UP.	On the integrated countermeasures control panel, the JETT SEL switch light goes off and remains off.
55.	Position both SV/FLPS display mode switches to STRAY VOLTAGE TEST.	Both SV/FLPS display a white S.
56.	Position and hold both SV/FLPS display control switches to SV TEST.	
57.	Release both SV/FLPS display control switches.	
58.	Position both SV/FLPS display mode switches to FLPS/OFF.	Both BATT indicator lights go off.
59.	On the integrated countermeasures control panel, position the DISPENSER switch to OFF.	On the left DDI, NOT RDY is displayed for ALE-47. On the right DDI, RDY is displayed with a dash through it.
60.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR and GEAR UPLOCK switches to NORM.	
61.	Remove both SV/FLPS from forward dispenser housings.	
62.	Install both SV/FLPS in aft dispenser housings.	On the left DDI, PBIT GO is displayed when SF TEST is complete. On the right DDI, inventories are C 14, F 18, O1 14 and O2 14.
63.	On the integrated countermeasures control panel, position the DISPENSER switch to ON.	

## Release and Control System Checks

Table 4-25. AN/ALE-47 Countermeasures Dispenser System Check (Continued)

CHECK STEP	PROCEDURES	RESULT
64.	On the proximity switch control panel, position the LEFT, RIGHT and NOSE GEAR switches to WT OFF WHLS and GEAR UPLOCK to UP.	<p>Both SV/FLPS display a white S.</p> <p>Both BATT indicators go off.</p> <p>On the left DDI, NOT RDY is displayed for ALE-47. On the right DDI, RDY has a dash through it.</p> <p>Display areas off.</p>
65.	Position both SV/FLPS display mode switches to STRAY VOLTAGE.	
66.	Position and hold both SV/FLPS display control switches to SV TEST.	
67.	Release both SV/FLPS display control switches.	
68.	Position both SV/FLPS display mode switches to FLPS/OFF.	
69.	On the integrated countermeasures control panel, position the DISPENSER switch to OFF.	
70.	(If installed) On the control indicator panel, press and release POWER ON ALR-67 indicator switch.	
71.	On the proximity switch control, position the LEFT, RIGHT, NOSE GEAR and GEAR UPLOCK switches to NORM.	
72.	Position the ICM electrical safety switch to SAFE (extended) position.	
73.	Position the left and right DDI power switches to OFF.	
74.	On the GND PWR control panel, position the EXT PWR switch to OFF.	
75.	Disconnect/remove test equipment.	
76.	If no other checks are to be performed, proceed to postcheck procedures (Paragraph 4-43).	

**4-43. POSTCHECK PROCEDURES.**

4-44. To ensure that the aircraft is returned to safe condition at the completion of system checks verify the following:

1. Aircraft grounded.
2. (If applicable) Remove electrical power from aircraft.
3. (If applicable) Remove cooling air from aircraft.
4. (M61) Gun interface cable connector, disconnected and stowed.
5. Position all armament switches in accordance with Table 5-1.
6. Position all other switches to OFF, SAFE or NORMAL.
7. Verify ARMAMENT OVERRIDE switch in off (down) position.
8. Set Weapon Insertion Panel codes to 00, 00, or store code of store installed.
9. Open all rack suspension hooks on all unloaded stations.
10. Disconnect/remove all test equipment from the aircraft.
11. Install/close all access doors, panels and remove tools from area.
12. Report status of aircraft to proper authority.





**SECTION V**  
**COMMON PROCEDURES**

**5-1. INTRODUCTION.**

5-2. This section contains procedures of a repetitive nature which are common to more than one weapon/store loading operation and must be performed to complete a safe and reliable load. In other sections, frequent references will be made to this section.

**5-3. AIRCRAFT PREPARATION/INSPECTION.**

5-4. Prepare/inspect aircraft for loading as follows:

1. Verify that aircraft preflight inspection has been completed and ensure that all required safety devices are installed.

2. Position aircraft in designated rearming area. Ensure aircraft is accessible for loading.

3. Verify that armament Preloading Checks have been performed and that applicable systems are in the up status (Section IV).

4. Ground aircraft (Paragraph 5-5).

5. (If applicable) Power removed.

6. Position all armament switches in accordance with Table 5-1.

7. Verify that all loaded stations are safe as follows (Figure 5-1):

a. BRU-32 and BRU-33 ground safety handles in LOCKED position.

b. MER electrical safety pin installed and safety stop levers in LOCKED position.

c. BRU-41/BRU-42 safety stop levers in LOCKED position.

d. Gun electrical safety switch extended and manual clearing handle in clear position.

e. On F/A-18C and F/A-18D, 163985 and up, verify ICM electrical safety switch is extended.

f. LAU-7 detent wrench safety pin installed.

g. LAU-115 and LAU-116 INDICATOR in GREEN LOCKED position.

h. LAU-117 launcher restraint pin engaged in missile.

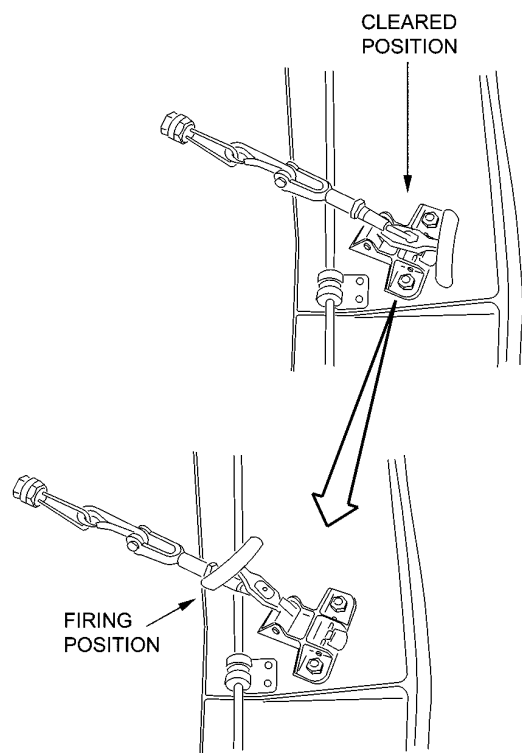
i. LAU-118 launcher detent handle down.

j. LAU-127 launcher, IFL in LOCKED position.

8. Verify pylons, racks and launchers properly configured.

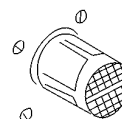
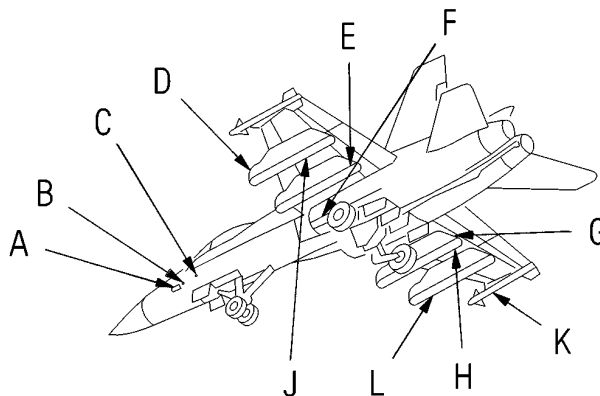
**Table 5-1. Aircraft Armament Switches**

PANEL	SWITCH	POSITION
MC/HYD ISOL	MC	NORM
NUC WPN SWITCH	NUC WPN	DISABLE (down position)
GND PWR CONTROL	1 2 3 4 EXT PWR	AUTO AUTO AUTO AUTO OFF
LEFT VERTICAL	SELECT JETT JETT (pushbutton)	SAFE off
MASTER ARM CONTROL	MASTER EMERG JETT (pushbutton)	SAFE Yellow/Brass Ring not visible
ECM CONTROL (NOTE 1) ICMDS (NOTE 2)	AUX REL ECM DISPENSER MODE SEL RWR	NORM OFF OFF STBY OFF
ANTENNA SELECT CONTROL PANEL (NOTE 3 and 4)	ALE-39 RESET	OFF
EMERGENCY JETTISON	(rear cockpit) EMERG JETT	Yellow/Brass Ring not visible
ITALD CONTROL (if installed)	INSTRM POWER Circuit Breaker	OFF RESET
AN-ALQ-167 CONTROL (if installed)	PWR	OFF
MAP GAIN CONTROL	IR COOL	(NOTE 5)
COMMUNICATION	WPN VOL control	LOW
FWD/REAR COCKPIT	All other switches	OFF, SAFE, or NORMAL
<p style="text-align: center;"><b>NOTES</b></p> <p>1. 161353 thru 164980.  2. 165171 and up.  3. 161353 thru 163175.  4. 163427 thru 164980.  5. OFF position without AIM-9 L/M or with AIM-9X, and NORM position with AIM-9 L/M.</p>		



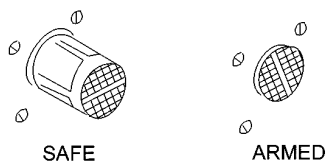
**MANUAL CLEARING HANDLE**

**A**



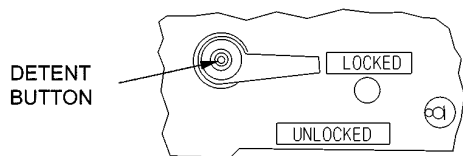
**GUN ELECTRICAL SAFETY SWITCH (EXTENDED)**

**B**



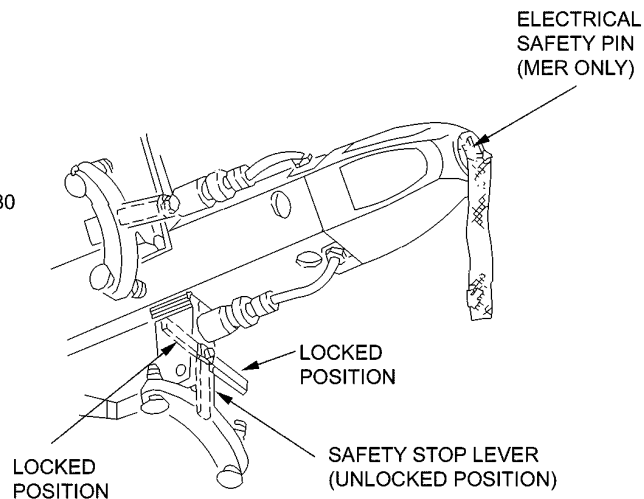
ICM ELECTRICAL SWITCH F/A-18C AND F/A-18D 163985 THRU 164980  
 ICM ELECTRICAL SWITCH F/A-18C AND F/A-18D 165171 AND UP

**C**



**GROUND SAFETY HANDLES**

**D**



**MER/BRU-41/42**

**E**

**Figure 5-1. Station Safing (Sheet 1 of 2)**

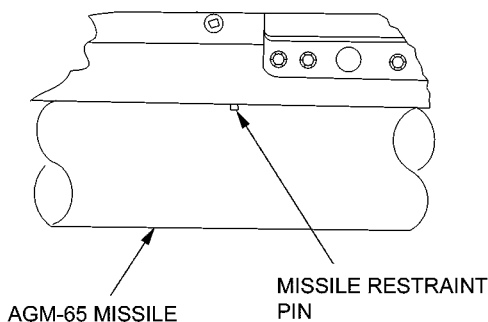
**A1-F18AE-LWS-000**  
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INDICATORS GREEN

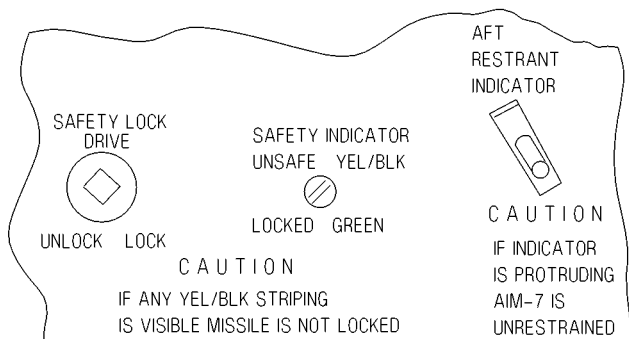
LAU-116

**F**



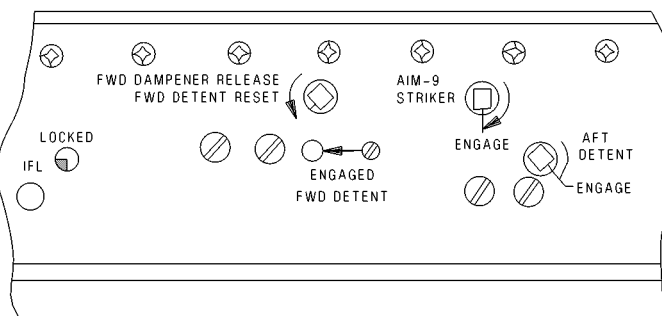
LAU-117

**G**



LAU-115

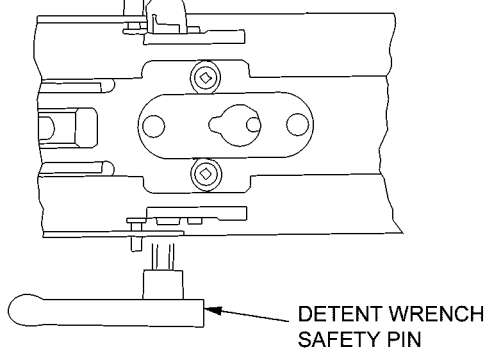
**H**



LAU-127

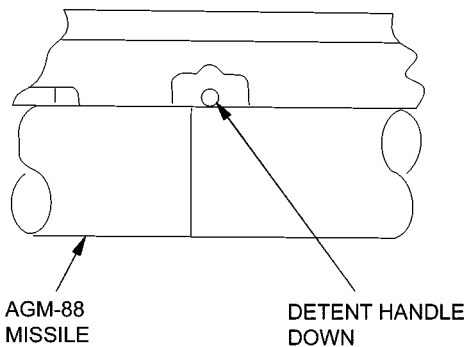
**J**

DETENT  
 HOLDDOWN  
 PIN



LAU-7

**K**



LAU-118

**L**

**Figure 5-1. Station Safing (Sheet 2)**

9. (As applicable) Remove cartridge retainers, auxiliary cartridge cap, MER/BRU-42 breech caps and verify cartridges are removed from all stations to be loaded. Stow retainers to prevent damage to retainers during loading.

10. (If applicable) Verify adapter cables installed (Paragraph 3-9).

11. Verify open suspension hooks on empty pylons not to be loaded and stations to be loaded (Paragraph 5-7).

5-5. **GROUNDING AND APPLICATION OF ELECTRICAL POWER.** Proceed as follows:

1. Grounding of aircraft:

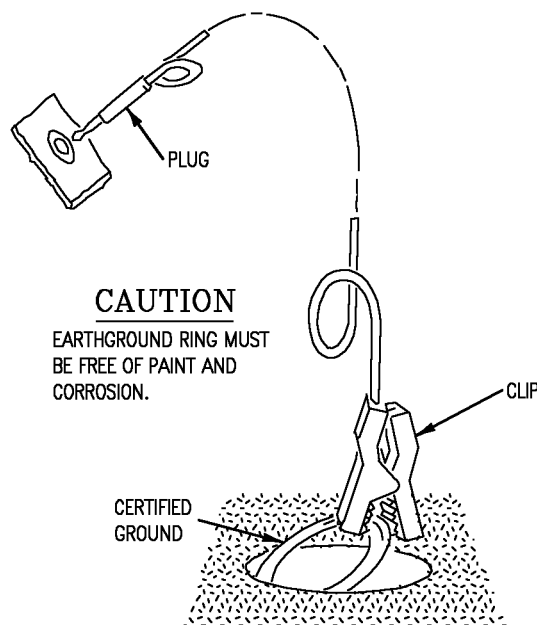
a. (If applicable) Verify that electrical power is removed from aircraft.

#### **NOTE**

Proper grounding of aircraft requires use of an authorized grounding cable. The grounding cable must be attached to a certified ground outlet or a common static earth ground, then to an authorized grounding point on the aircraft.

b. Ground aircraft (Figure 5-2).

2. (If applicable) Application of electrical power.



**Figure 5-2. Aircraft Grounding**

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- a. Position all armament switches in accordance with Table 5-1.
- b. Set all other switches to OFF, SAFE or NORMAL.

**NOTE**

Electrical power may be applied to the aircraft during the loading/unloading evolution but will be held to a minimum consistent with operational requirements. The step “(If applicable) Power removed” may be omitted when operational requirements dictate a power requirement, but the armament circuits will NOT be energized under any condition unless specified by a step procedure within this manual. Power must be removed from the aircraft if the step “Power removed” is not preceded by “(If applicable).”

- c. (If applicable) Verify right AMAD decoupled.

**CAUTION**

Only qualified personnel shall operate Auxiliary Power Unit (APU).

- d. Apply external power or start APU.
- e. On GND PWR control panel, position EXT PWR switch to RESET and back to NORM.

5-6. **BOMB RACK LOCKING AND UNLOCKING.** Lock and unlock bomb rack as follows (Figure 5-3):

1. Manual locking:

- a. Ensure suspension hooks are closed by visually inspecting hook indicators align with indexing marks on bomb rack (Paragraph 5-7).

**CAUTION**

Do not leave ground safety handle in the intermediate position.

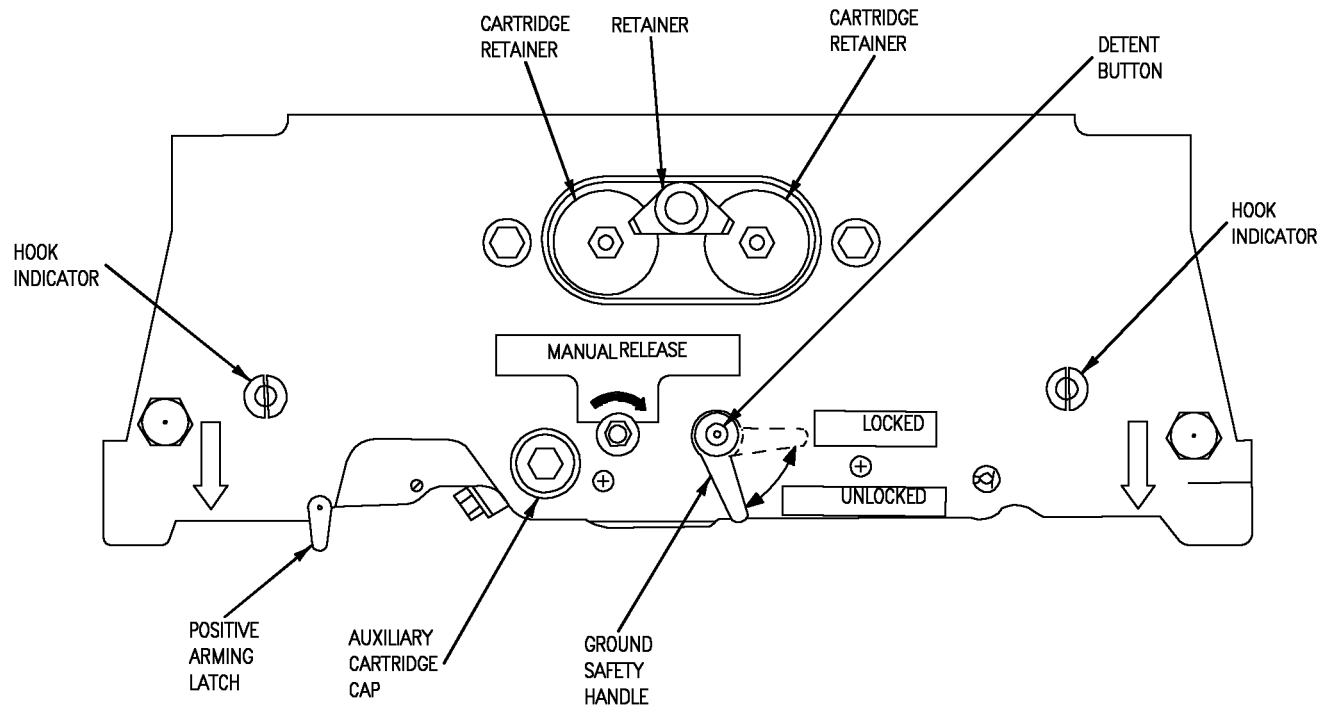
- b. Press detent button and rotate handle to the LOCKED position. Detent button may not extend fully when released until power is applied to aircraft.

2. Manual unlocking:

- a. Press detent button and rotate handle to the UNLOCKED position.

3. (BRU-32) Electrical locking after emergency jettison has been performed:

- a. Ensure suspension hooks are closed by visually inspecting hook indicators align with indexing marks on bomb rack (Paragraph 5-7).



**Figure 5-3. Bomb Rack Preparation**

**CAUTION**

Do not press detent button on ground safety handle.

**NOTE**

When rotating ground safety handle toward the LOCKED position, handle will not go completely to LOCKED.

- b. Rotate ground safety handle to LOCKED position.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- c. Apply electrical power (Paragraph 5-5).
- d. (If applicable) Apply external cooling air.
- e. Set and hold switch 3 to B ON for 3 seconds. Ground safety handle goes to LOCKED position and detent button extends.
- f. Position EXT PWR switch to OFF.

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- g. (If applicable) Remove electrical power from aircraft.
- h. (If applicable) Remove cooling air from aircraft.

**5-7. BOMB RACK LATCHING AND RELEASE.** Latch and release bomb rack as follows (Figure 5-3):

1. Latching:

- a. Ensure ground safety handle is in UNLOCKED position.

**WARNING**

Do not place fingers in lug well when closing suspension hooks.

- b. Close suspension hooks.
- c. Ensure suspension hooks are closed by visually checking hook indicators align with indexing marks on bomb racks.
- d. Press detent button on ground safety handle and rotate handle to the LOCKED position.

2. Releasing:

**CAUTION**

When releasing bomb racks, ensure ground safety handle is in UNLOCKED position. Failure to do so could cause internal bomb rack damage.

- a. Rotate ground safety handle to the UNLOCKED position.
- b. Insert 7/16-inch socket wrench on MANUAL RELEASE shaft and rotate in the direction of the arrow until suspension hooks open.

**5-8. BRU-32 BOMB RACK PREPARATION AND INSPECTION.** Verify the following:

- 1. Cartridge retainers, auxiliary cartridge cap and cartridges are removed. Cartridge retainers stowed.
- 2. Ensure rack suspension hooks are open.
- 3. Swaybraces adjusted as required (Paragraph 5-10).

**5-9. BRU-32 BOMB RACK LOCKED INSPECTION.** The BRU-32 can be visually inspected for a locked indication from either side. Inspect as follows (Figure 5-4):

- 1. Hook indicators aligned with index marks.
- 2. (Wing Pylon) Indicator indicating LOCKED.
- 3. Ground safety handle in LOCKED position.



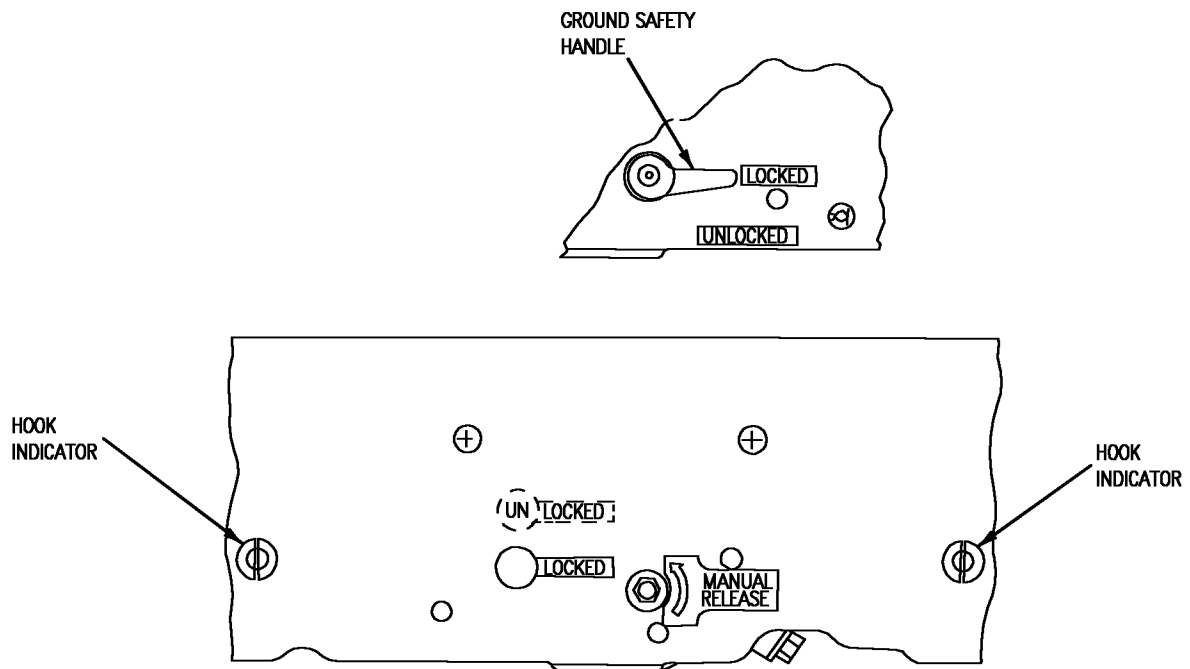


Figure 5-4. BRU-32 and BRU-33 Bomb Rack Locked Inspection

#### 5-10. BRU-32 AND BRU-33 BOMB RACK SWAYBRACE INSPECTION AND ADJUSTMENT.

1. Inspect swaybrace operation as follows:

##### NOTE

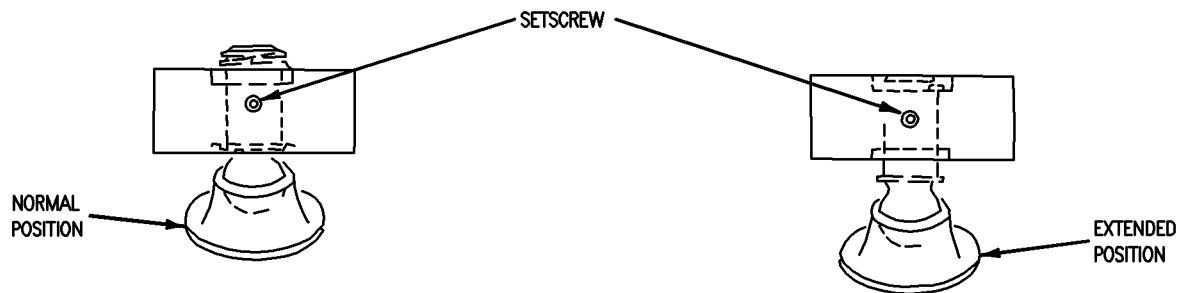
Actuation of swaybraces is accomplished by spring tension and functions automatically when a weapon/store is loaded. Proper seating of swaybrace pads occurs when weapon/store is shaken either manually or by aircraft taxi and flight vibration.

- a. Manually compress swaybrace assembly to the fully retracted position and allow to spring down.
2. Adjust swaybraces as follows (Figure 5-5).

##### NOTE

If drag is not present on bolt during swaybrace adjustment, tighten setscrew with 3/32 hex Allen wrench until drag is present. Do not overtighten setscrew.

- a. Normal:
    - (1) Adjust pad assembly counterclockwise from top of bolt with a screwdriver until pad assembly bottoms into crossbar.



**Figure 5-5. BRU-32 and BRU-33 Bomb Rack Swaybrace Adjustment**

b. Extended:

(1) Adjust pad assembly clockwise from top of bolt with a screwdriver until top of bolt is flush with top of crossbar.

**5-11. ACCESSORY SUSPENSION EQUIPMENT (ASE) PREPARATION/INSPECTION.**

**5-12. BRU-33 PREPARATION AND INSPECTION.** Verify the following:

1. BRU-32:
  - a. Ground safety handle in LOCKED position.
  - b. Verify that swaybraces are properly seated.
2. BRU-33:
  - a. Cartridge retainers and cartridges removed. Cartridge retainers stowed.
  - b. Verify that adapter cable is installed (Figures 3-5 and 3-6).
  - c. Position ground safety handle to UNLOCKED.
  - d. Open ejector rack hooks by rotating MANUAL RELEASE in the direction of the arrow.
  - e. Swaybraces properly adjusted for weapon being loaded.

5-13. **BRU-33 LOCKED INSPECTION.** The BRU-33 can be visually inspected for a locked indication. Inspect as follows (Figure 5-4):

1. Hook indicators aligned with index marks.
2. Ground safety handle in LOCKED position.

5-14. **MER/BRU-41/42 PREPARATION/INSPECTION.** Verify the following:

1. BRU-32:
  - a. Ground safety handle in LOCKED position.
  - b. Bomb rack swaybraces properly seated.
2. MER/BRU-41/42:
  - a. (MER) Electrical safety pin installed.
  - b. Breech caps disconnected and cartridges removed.
  - c. Adapter cable installed (Figure 3-7).
  - d. Safety stop lever positioned to UNLOCK.
  - e. Suspension hooks open; manual release lever in full forward position.
  - f. (MER) Mode selector switch set as directed.

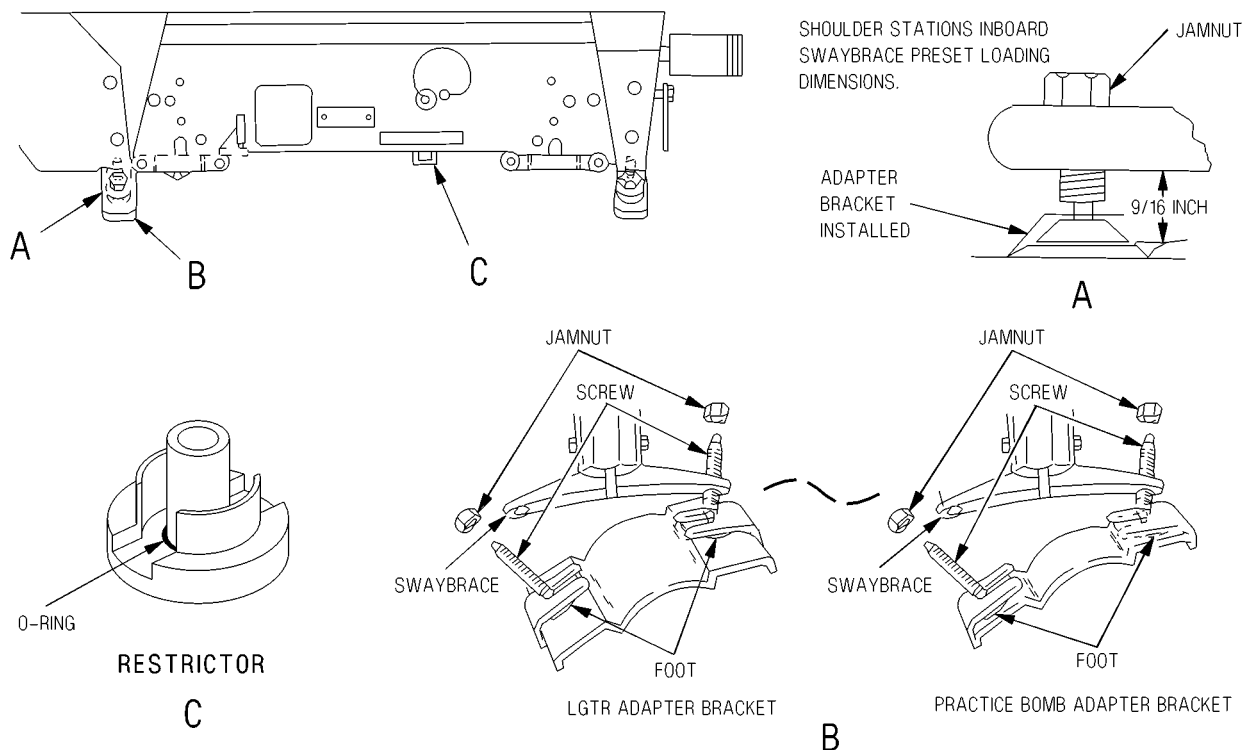
<b>CAUTION</b>
----------------

Jamnuts must be wrench tightened to assure adequate screw thread engagement and retention of jamnuts.

**NOTE**

If practice bomb/LGTR adapter brackets are to be used, swaybrace presetting will be done after brackets are installed.

- g. (Practice bombs) Preset inboard shoulder swaybrace to 9/16 inch and position jamnut on top of swaybrace arm (Figure 5-6).
- h. Adjust all other swaybraces to the full up position.
- i. Tighten jamnuts wrench tight.



**Figure 5-6. MER/BRU-41 Adapter Bracket Installation**

**5-15. MER/BRU-41 ADAPTER BRACKETS AND RESTRICTOR INSTALLATION AND REMOVAL.** Installation of MER/BRU-41 practice bomb adapter brackets permits carriage of LUU-2 flares, Mk 58 MLM and Mk 76, Mk 106, BDU-33 and BDU-48 practice bombs on the MER/BRU-41. Installation of LGTR adapter brackets permits carriage of the Laser Guided Training Round.

1. Install practice bomb/LGTR adapter brackets as follows (Figure 5-6):

**NOTE**

LGTR adapter brackets (P/N 1784AS0827) will only be installed on MER/BRU-41 stations 1 and 2. Carriage of the LGTR is not authorized on MER/BRU-41 shoulder stations.

- a. Remove one jamnut and swaybrace screw from forward and aft arms.
- b. Install practice bomb/LGTR adapter bracket.
- c. Reinstall swaybrace screws and jamnuts.
- d. (Practice bombs) Preset inboard shoulder swaybraces to 9/16-inch and position jamnut on top of swaybrace arm.

**CAUTION**

Restrictor is not used when flares or MLM are carried. Restrictors must be installed when practice bombs or LGTR are to be carried.

**NOTE**

Practice bomb/LGTR restrictors are identical.

2. (If applicable) Install MER/BRU-41 restrictors as follows (Figure 5-6).
  - a. Remove breech and gun from ejector unit.
  - b. Remove ejector foot from gun and install restrictor with “O” ring.
  - c. Reinstall gun and breech in ejector unit.
3. Remove practice bomb/LGTR adapter brackets as follows:
  - a. Remove one jamnut and swaybrace screw from forward and aft arms.
  - b. Remove practice bomb/LGTR adapter bracket.
  - c. Reinstall swaybrace screws and jamnuts.
4. (If applicable) Remove MER/BRU-41 restrictor as follows:
  - a. Remove breech and gun from ejector unit.
  - b. Remove restrictor from gun and install ejector foot.
  - c. Reinstall gun and breech in ejector unit.

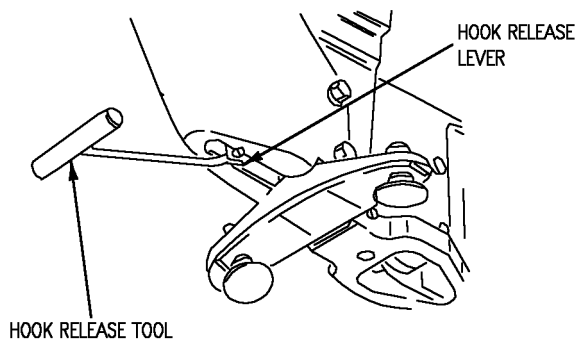
5-16. **MER/BRU-41/42 LATCHING AND RELEASE.** Latch and release MER/BRU-41/42 as follows (Figure 5-7):

1. Latching:
  - a. Ensure safety stop lever is in UNLOCKED position.

**CAUTION**

MER/BRU-41/42 suspension hooks must remain closed at all times when MER/BRU-41/42 is not in use.

- b. Close suspension hooks.



**Figure 5-7. MER/BRU-41/42 Latching and Release**

**CAUTION**

Shoulder station safety stop levers cannot be placed in the full locked (detent) position if rotated towards MER/BRU-41/42 adapter.

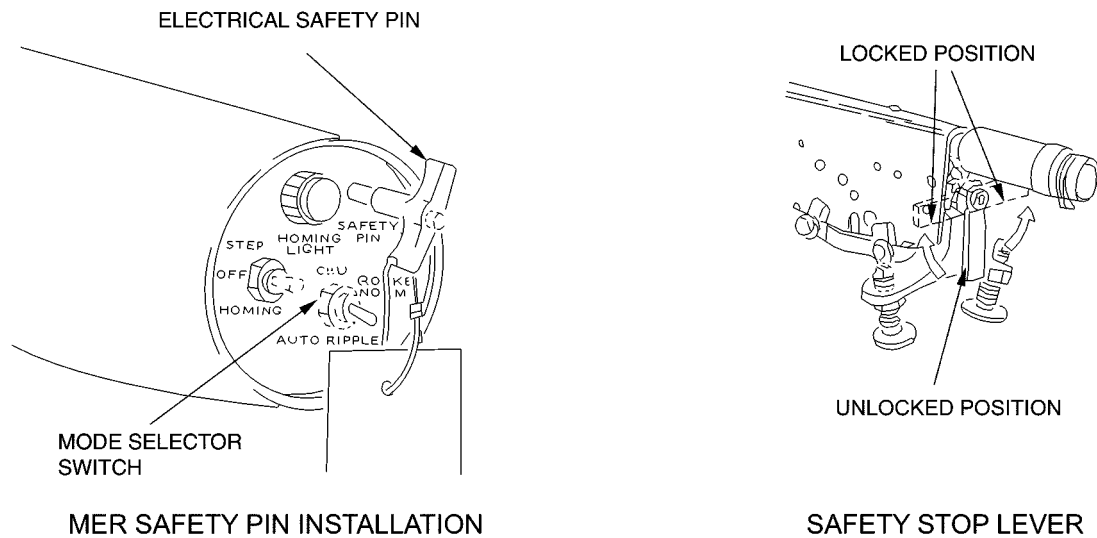
- c. Rotate safety stop lever to the full LOCKED (detent) position.
2. Releasing:
  - a. Ensure safety stop lever is in the UNLOCKED position.
  - b. Open suspension hooks by moving manual release lever forward.

**5-17. MER SAFETY PIN INSTALLATION AND MER/BRU-41/42 SAFETY STOP LEVER POSITIONING.** Install safety pin and position safety stop lever as follows (Figure 5-8):

1. (MER) Install electrical safety pin.

**CAUTION**

Shoulder station safety stop levers cannot be placed in the full LOCKED (detent) position if rotated toward MER/BRU-41/42 adapter.



**Figure 5-8. MER Safety Pin Installation and MER/BRU-41/42 Safety Stop Lever Positioning**

2. Rotate safety stop lever to LOCKED position. Ensure shoulder station safety stop lever does not engage MER/BRU-41/42 adapter and that the safety stop lever is held in the LOCKED position by the detent.

5-18. **MER/BRU-41/42 SWAYBRACE ADJUSTMENT.** Adjust MER/BRU-41/42 swaybraces as follows (Figure 5-9):

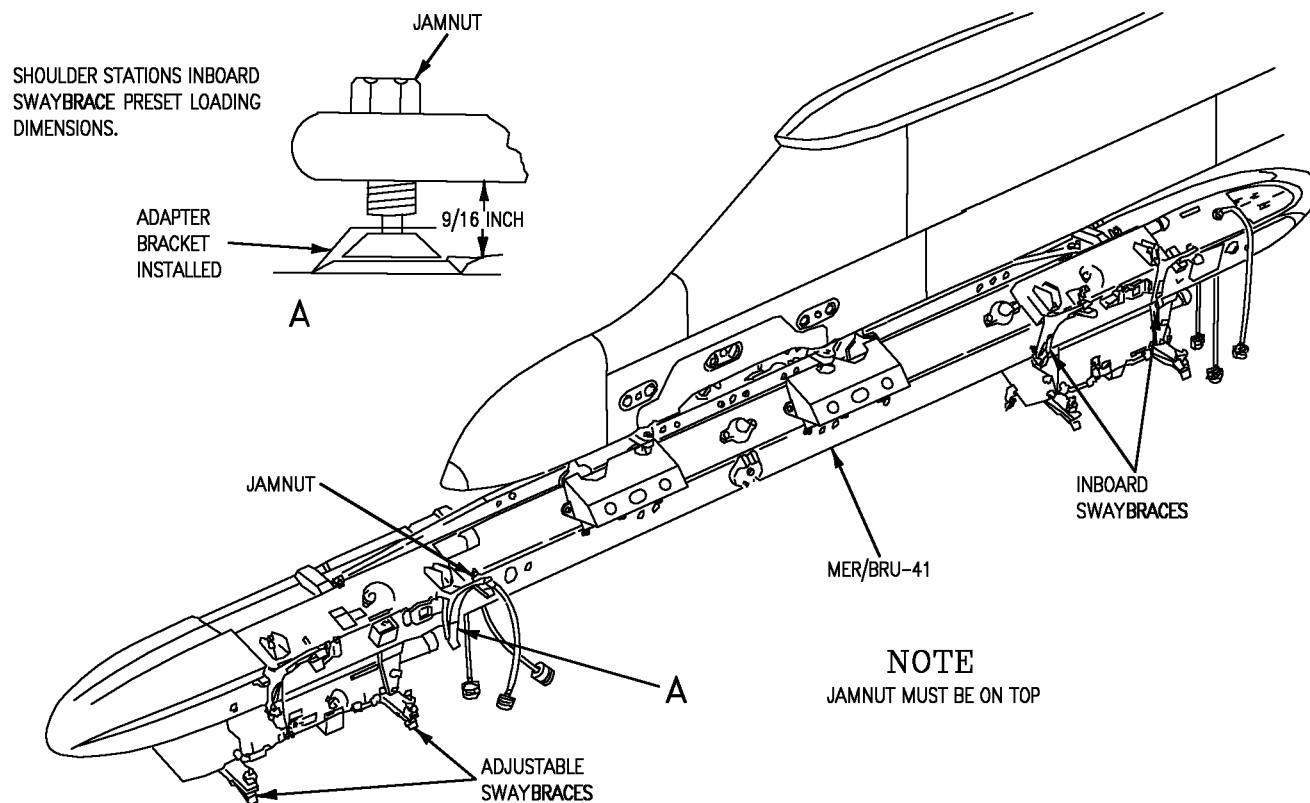
1. Adjust swaybrace screws until adapter brackets contact weapon; tighten centerline and outboard shoulder station swaybraces as follows:

**NOTE**

Improper tightening of swaybrace screws will result in hung ordnance.

- a. Mk 58 MLM (shoulder station). Three half turns of aft swaybrace screw.
- b. Mk 58 MLM (centerline). Three half turns of each aft swaybrace screw.
- c. Mk 76/BDU-33/BDU-48 (shoulder station). Six half turns of forward outboard swaybrace screw with aft outboard swaybrace screw fully retracted.
- d. Mk 76/BDU-33/BDU-48 (centerline). Three half turns of each forward swaybrace screw with aft swaybrace screws fully retracted.
- e. Mk 106 (shoulder station). Six half turns of forward outboard swaybrace screw.

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**Figure 5-9. MER/BRU-41/42 Swaybrace Adjustment**

- f. Mk 106 (centerline). Six half turns of each forward swaybrace screw.
- g. Flares (shoulder station). Three half turns of outboard swaybrace screws.
- h. Flares (centerline). Three half turns of each swaybrace screw.
- i. LGTR (centerline only). Three half turns of each swaybrace screw (aft braces first), ensuring LGTR is level with rack.
- j. TALD/ITALD.
  - (1) Shoulder station.
    - (a) Ensure weapon is resting on preset inboard swaybrace pads.
      - TALD - Forward inboard - 7/16 inch.  
- Aft inboard - 9/16 inch.
      - ITALD - Forward inboard - 9/16 inch.  
- Aft inboard - 11/16 inch.
    - (b) Spread wings.
    - (c) Tighten forward and aft outboard swaybraces one full turn, ensuring wing contacts pad on weapon body.

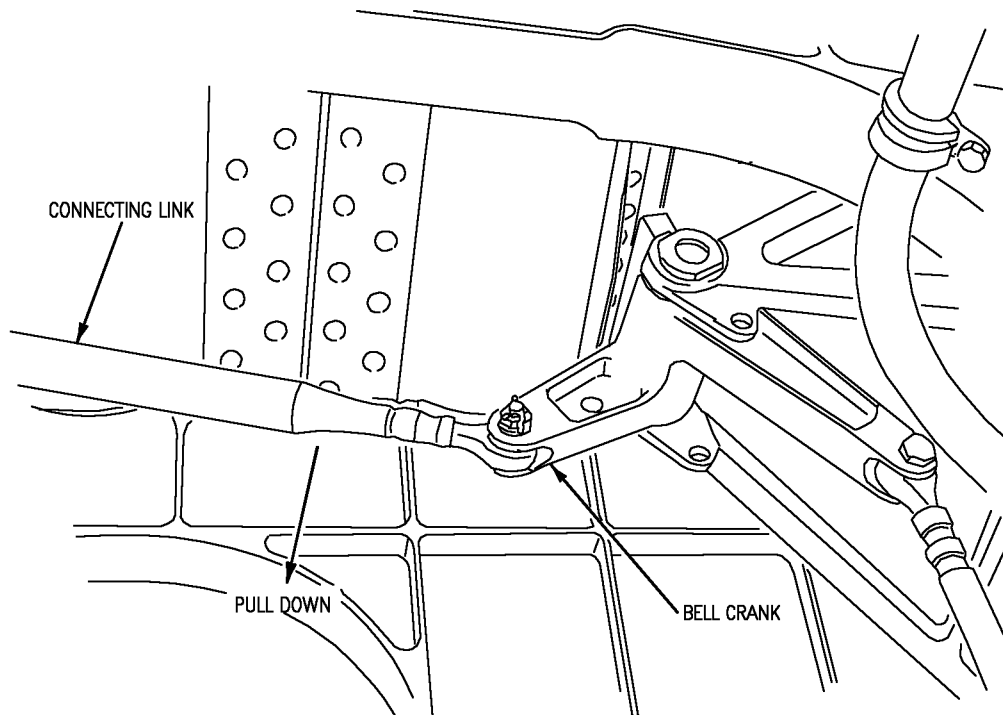


- (2) Centerline station.
  - (a) Spread wings.
  - (b) Tighten forward and aft swaybraces 1/2 turn.
2. Retract all swaybrace screws on empty stations.
3. Tighten all jamnuts, including empty stations to prevent swaybrace screw loss.

#### **5-19. LANDING GEAR DOOR RETRACTING.**

5-20. Retract landing gear door as follows (Figure 5-10):

1. Enter main landing gear well from aft of aircraft.
2. Pull down on connecting link to retract forward landing gear door towards main gear and hold door in position.



**Figure 5-10. Landing Gear Door Retracting**

## **5-21. WEAPONS INSERTION PANEL.**

**5-22. WEAPONS INSERTION PANEL CODE INPUTS 161353 THRU 165206.** The weapons insertion panel (Figure 5-11) is part of the armament computer behind door 14R. Weapons and pylons compatible with the aircraft have a code number except missiles on fuselage stations. Fuzes have a code number and have to be compatible with the weapon to allow normal release. Code numbers must be dialed in before release and control system checks and during loading (refer to NWP 3-22.5-F/A-18 Tactical Manual/Pocket Guide for codes). Dial in codes as follows:

### **1. ARMAMENT.**

- a. Adjust the left code wheel for the selected station until the first digit of the code appears in the window.
- b. Adjust the right code wheel for the selected station until the second digit of the code appears in the window.
- c. Repeat steps a and b for each station to be checked/loaded.
- d. (Wing tip) Adjust code wheel, as required, or to 0 if both wing tip stations are empty. (Pylons not installed) Adjust both code wheels until 0 appears in windows.
- e. (Unloaded pylons) Open BRU-32 hooks on unloaded stations and adjust both code wheels until 0 appears in windows.
- f. (Loaded pylons) Adjust both code wheels until appropriate weapon code appears in windows.

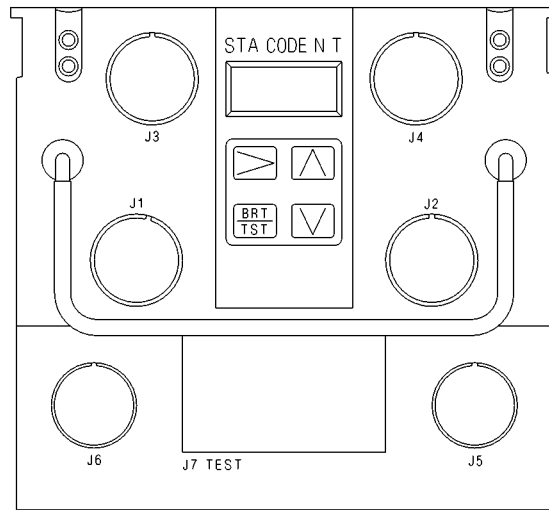
### **2. FUZING:**

#### **a. Nose Fuze:**

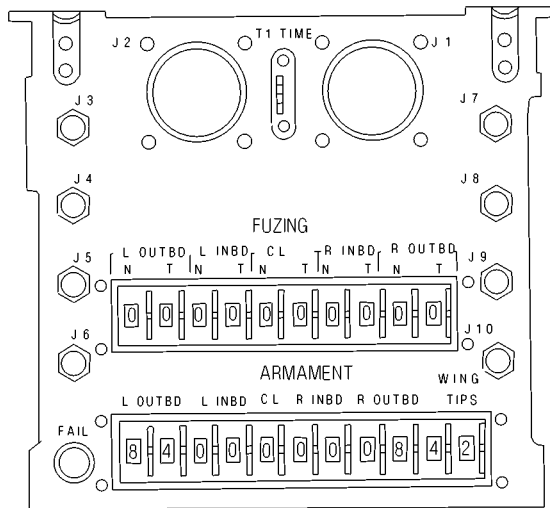
- (1) Adjust the left code wheel for the selected station until the single digit nose (N) fuze code appears in the window.
- (2) Repeat Step (1) for each station to be checked/loaded.
- (3) On empty stations or stations without a nose fuze adjust the left code wheel until 0 appears in the window.

#### **b. Tail Fuze:**

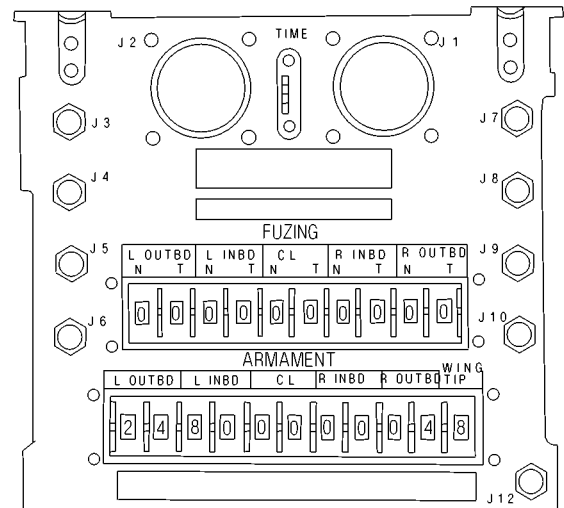
- (1) Adjust the right code wheel for the selected station until the single digit tail (T) fuze code appears in the window.
- (2) Repeat Step (1) for each station to be checked/loaded.
- (3) On empty stations or stations without a tail fuze adjust the right code wheel until 0 appears in the window.



165207 AND UP



161353 THRU 163175



163427 THRU 165206

**Figure 5-11. Weapons Insertion Panel**

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**5-23. WEAPONS INSERTION PANEL CODE INPUTS F/A-18C AND F/A-18D, 165207 AND UP.**

The weapons insertion panel (Figure 5-11) is located on the faceplate of the armament computer. Each wingtip/pylon/fuselage weapon station requires a code entry that is compatible with the weapon/store loaded at that station. Pylon stations have the additional capability of utilizing a nose/tail fuzing code option. Rounds count for the aircraft gun system is also entered through the WIP panel. WIP code numbers/rounds counts must be entered before release and control system checks and during weapons/stores loading.

**NOTE**

After initial power-up BIT (3 seconds) or after 60 seconds of no pushbutton activity, the WIP display will go blank. Push any WIP pushbutton to retrieve the WIP display.

When entering WIP codes using battery power, the MMP ENABLE/BRCU switch, located on the nose wheelwell DDI, must be reset after each five (5) minute interval.

1. Station Select (STA).

a. Select the applicable weapon station by pushing the cursor select button until the two character STA display is flashing.

b. Press the up arrow or down arrow button until the desired weapon station letters are displayed.

2. Armament Code Select (CODE).

a. Push the cursor select button until the first character of the CODE display is flashing.

b. Push the up arrow or down arrow button until the desired CODE character is displayed.

c. Repeat the required armament code select procedures for the second character of the CODE display.

3. Fuze Code Select (N T).

a. Push the cursor select button until the applicable character of the N T display is flashing.

b. Push the up arrow or down arrow until the desired nose or tail fuze code characters are displayed.

**5-24. CARTRIDGE REQUIREMENTS/INSTALLATION.**

**5-25. CARTRIDGE REQUIREMENTS.** Table 5-2 lists the cartridges required for LAU-116 launcher, BRU-32 and BRU-33 bomb racks and MER/BRU-41 ejector units.

**5-26. CARTRIDGE INSTALLATION.** Install cartridges as follows:

**NOTE**

Refer to NWP-3-22.5-F/18 Vol. IV, A1-F18AC-TAC-020/C for authorized/required CADS. Refer to Table 5-2.

**Table 5-2. Cartridge Requirements**

<b>RACK/LAUNCHER</b>	<b>CARTRIDGE</b>
BRU-32 Bomb Rack (Primary)	Two CCU-25/B
BRU-32 Bomb Rack (Auxiliary)	One Mk 19 Mod 0
BRU-33 Bomb Rack	Two CCU-45/B
LAU-116 Missile Launcher	Two CCU-45/B
MER/BRU-41 (per station)	One CCU-44/B or one CCU-107
ITER/BRU-42 (per station)	One CCU-44/B or one CCU-107

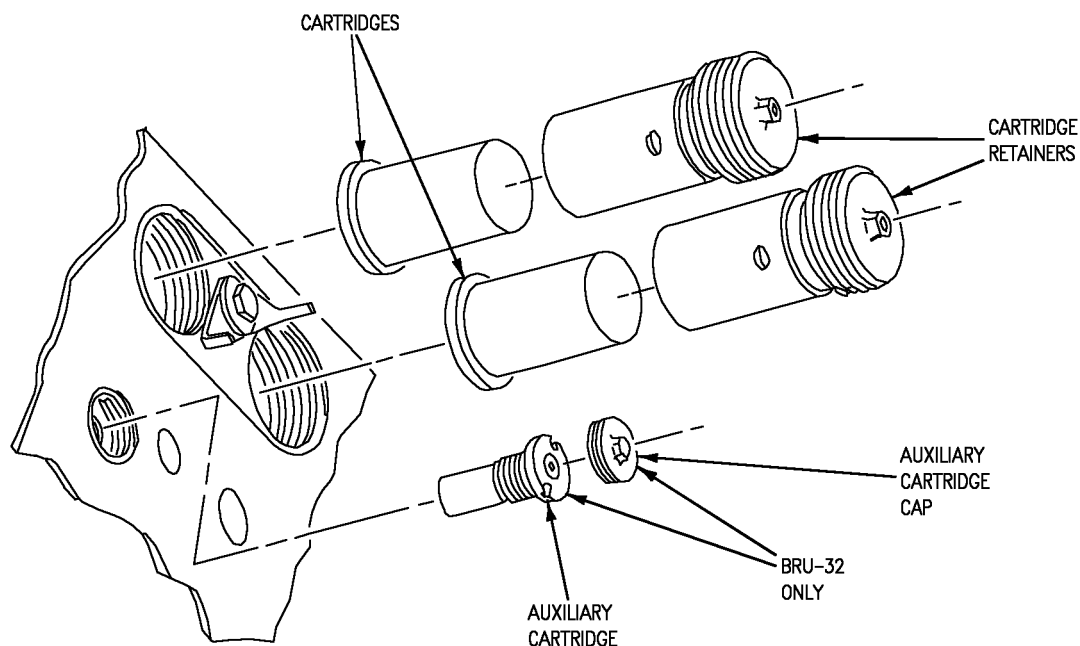
1. BRU-32 and BRU-33 ejector cartridge/retainer installation (Figure 5-12):
  - a. Install cartridges into cartridge retainers.
  - b. Screw cartridge retainers into breech housing finger tight.
  - c. Using a common speed handle and 7/16-inch socket, tighten wrench tight and retighten before and after each flight.
  - d. Visually check that cartridge installed indicator is fully extended.
  - e. Cartridge retainers (without cartridge) installation:
    - (1) Screw cartridge retainer into housing finger tight.
    - (2) Using a common speed handle and 7/16-inch socket, tighten wrench tight and retighten before and after each flight.
  - f. On BRU-32 and BRU-33 bomb racks with retainer, rotate retainer horizontally to retain cartridge retainers.

2. BRU-32 auxiliary cartridge/cap installation (Figure 5-12):

**NOTE**

Mk 19 auxiliary cartridges are not authorized for some accessory suspension equipment/weapons.

- a. Install cartridge into breech chamber.



**Figure 5-12. BRU-32 and BRU-33 Cartridge Installation**

b. Screw cartridge into breech chamber until bottomed and tighten finger tight; screw auxiliary cartridge cap into breech chamber finger tight.

c. Using a common speed handle and 7/16-inch socket, tighten wrench tight and retighten before and after each flight.

d. Cartridge cap (without cartridge) installation:

(1) Using a common speed handle and 7/16-inch socket, screw auxiliary cartridge cap into breech chamber, tighten wrench tight and retighten before and after each flight.

3. LAU-116 ejector cartridge/retainer installation (Figure 5-13):

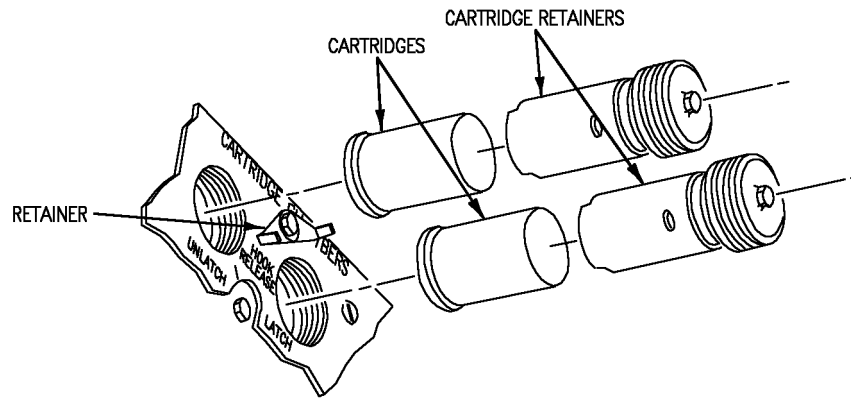
a. Install cartridges into cartridge retainers.

b. Screw cartridge retainers into breech housing finger tight.

c. Using a common speed handle and 7/16-inch socket, tighten wrench tight and retighten before and after each flight.

d. Visually check that cartridge installed indicator is fully extended.

e. On LAU-116 launcher with retainer, rotate retainer horizontally to retain retainers.



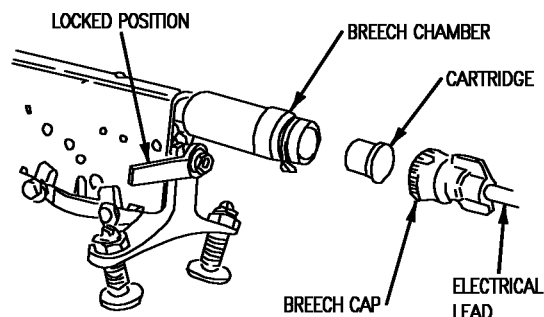
**Figure 5-13. LAU-116 Cartridge Installation**

- f. Cartridge retainers (without cartridge) installation:
  - (1) Screw cartridge retainer into breech housing finger tight.
  - (2) Using a common speed handle and 7/16-inch socket, tighten wrench tight and retighten before and after each flight.
  - (3) On LAU-116 launcher with retainer, rotate retainer horizontally to retain cartridge retainers.
- 4. MER/BRU-41/42 ejector cartridge/breech cap installation (Figure 5-14):

<b>CAUTION</b>
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Hold electrical lead firmly when installing breech cap. Wires will be broken if electrical lead is allowed to twist.

- a. Install ejector unit cartridge in breech chamber.
  - b. Tighten breech cap hand tight.
- 5-27. ARMING WIRE PROCEDURES.**
- 5-28. The following procedures provide general instructions for the handling of all arming wires/lanyards and general routing procedures for various combinations of weapons and bomb racks. These procedures must be observed to ensure safety as well as reliability. (Refer to Table 5-3 for Arming Wire Data).



**Figure 5-14. MER/BRU-41/42 Cartridge Installation**

**Table 5-3. Arming Wire Data**

ARMING WIRES HARDWARE	TYPE	MATERIAL	DIA. (IN)	LEG LENGTHS (IN.)
Mk 1 Mod 0	Single	Brass	0.064	57.0
Mk 2 Mod 0	Double	Brass	0.064	57.0
Mk 3 Mod 0	Single	Steel	0.032	57.0
Mk 4 Mod 1	Double	Brass	0.064	96.0
Mk 9 Mod 0	Single	Brass	0.064	90.0
MAU-182/A Swivel and Loop Assembly Ferrule Safety Clip	Arming Wire Accessory Kit Stk No. 1325-01-155-0139			
MAU-166 Swivel and Loop	Stk No. 4030-00-764-1234			
Arming Adapter Self Adjusting	Stk No. 1325-01-158-8635			
<p align="center"><b>NOTE</b></p> <p align="center">Composite arming wire data is listed in OD 12067/NA 11-1-116.</p>				



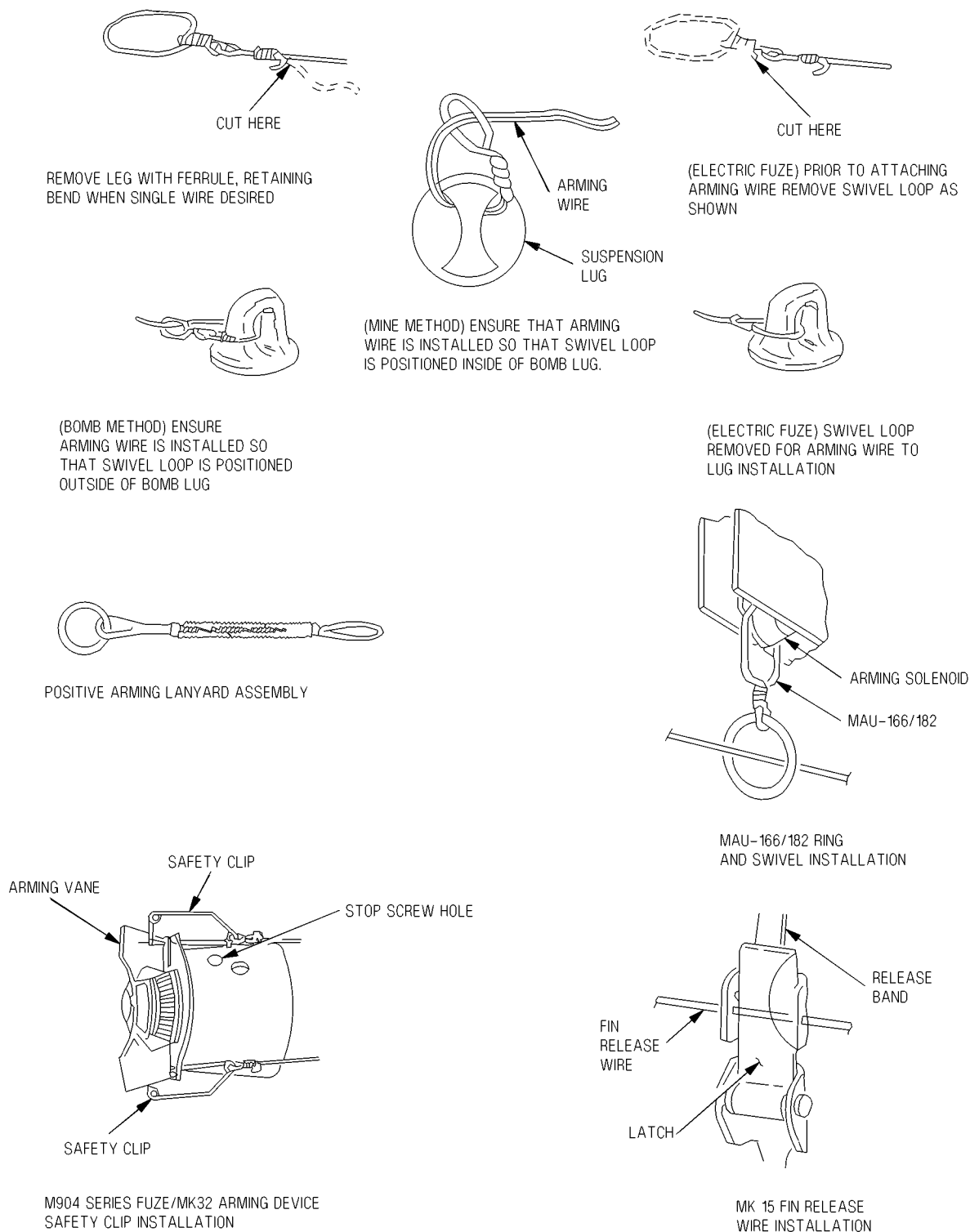
1. Arming wires/lanyards, unless otherwise specified, shall not be installed in the fuze until after the weapon has been loaded on the aircraft and the bomb rack ground safety handle is in the LOCKED position.
2. A safety pin, safety wire, safety clip or an arming wire/lanyard must be installed in the fuze at all times.
3. New arming wires/lanyards, safety clips, MAU-166/182 ring and swivel assemblies shall be used for each installation. In some applications, positive arming adapters will be used. During aircraft turnaround, all arming wires/lanyards that remain installed in ordnance on the aircraft must be carefully inspected for the following:
  - a. No kinks or bends exist in arming wires.
  - b. Swivel loops properly attached.
  - c. Safety clip not cut or nicked by vibration of arming vane during flight.
  - d. Arming lanyards NOT frayed, corroded, or broken strands.
4. Arming wire/lanyards must be installed so that only enough slack exists in the wires/lanyards to prevent the safety clips from exerting any tension on arming devices/fuzes (wires not preloaded) (Figure 5-15).
5. The routing of arming wires/lanyards with respect to the swaybraces, bomb lugs and ejector pistons is important for proper fuze/fin operation. Arming wires/lanyards pass under swaybraces except when arming wire routing figures specifically state otherwise. Note carefully whether arming wire routing figures specify that the arming wire/lanyard pass under or outside the swaybraces and, also, if wire/lanyard is threaded through or around the bomb suspension lug. Ensure arming wires/lanyards are not routed under ejector pistons.
6. When downloading weapons, do not remove the safety clip from the fuze until the safety pin/wire has been properly installed in the fuze.
7. To prevent preloading, install arming wires using safety clips in accordance with steps below:
  - a. (Composite arming wire) Nose fuze installation:
    - (1) Connect arming wire to bomb lug.
    - (2) Connect ring and swivel loop assembly to the arming unit.
    - (3) Route arming wire through ring and swivel loop.

<b>CAUTION</b>
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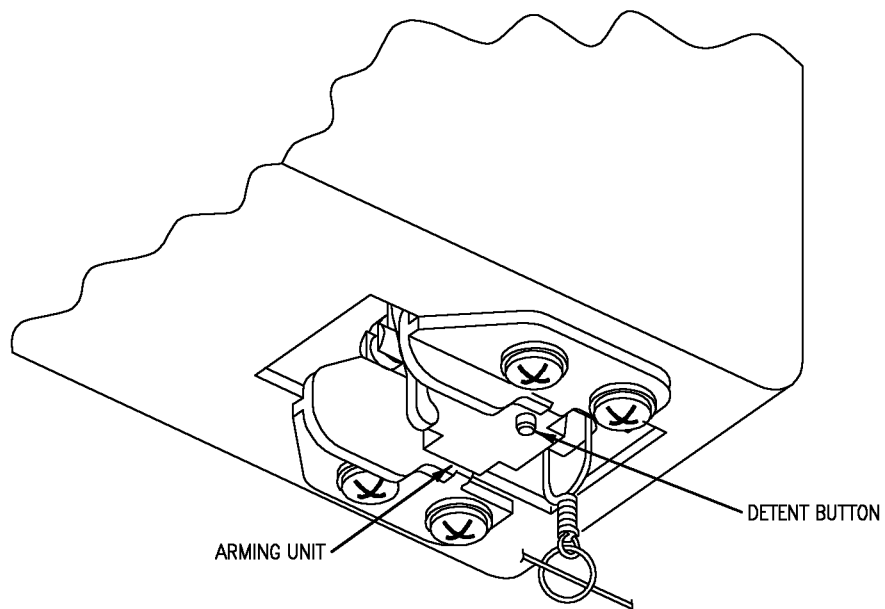
Arming wires must be installed so that swivel loops exert no tension on the arming unit (wires not preloaded).

- (4) Install the safety clip in the inner (large) hole of the arming wire guide and arming vane on the M904 series fuze and the outer (small) hole for the Mk 32 arming device.
8. For Mk 15 retard fin wire configuration perform the following:

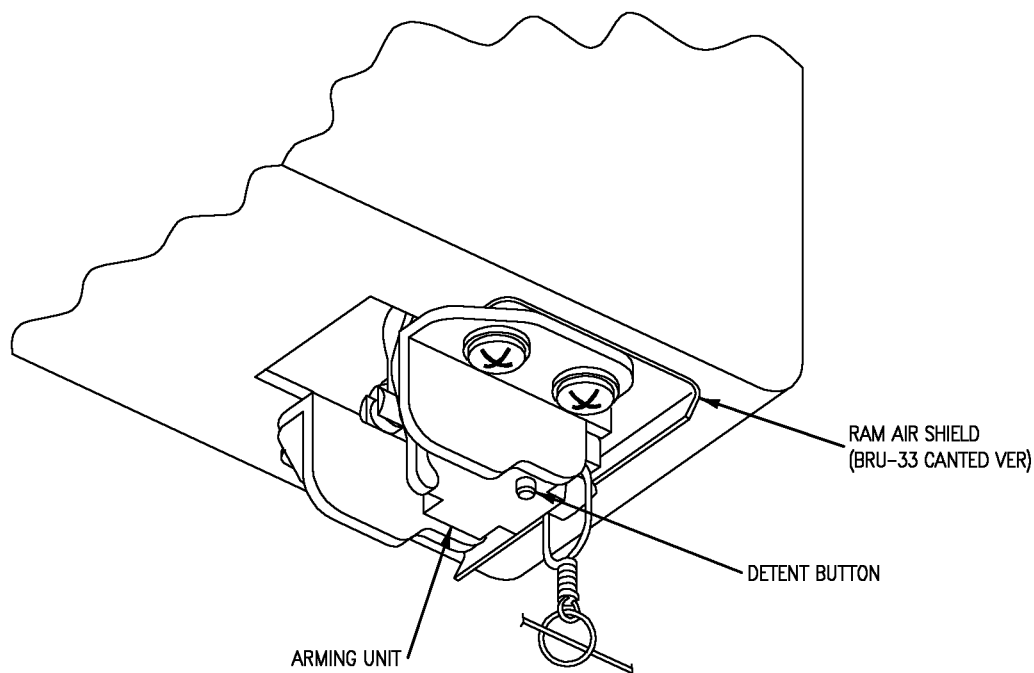
**A1-F18AE-LWS-000**  
**Common Procedures**



**Figure 5-15. Arming Wire Installation (Sheet 1 of 2)**



**MAU-166/182 RING AND SWIVEL INSTALLATION WITH  
ZERO RETENTION FORCE ARMING UNIT IN BRU-32**



**MAU-166/182 RING AND SWIVEL INSTALLATION WITH  
ZERO RETENTION FORCE ARMING UNIT IN BRU-33**

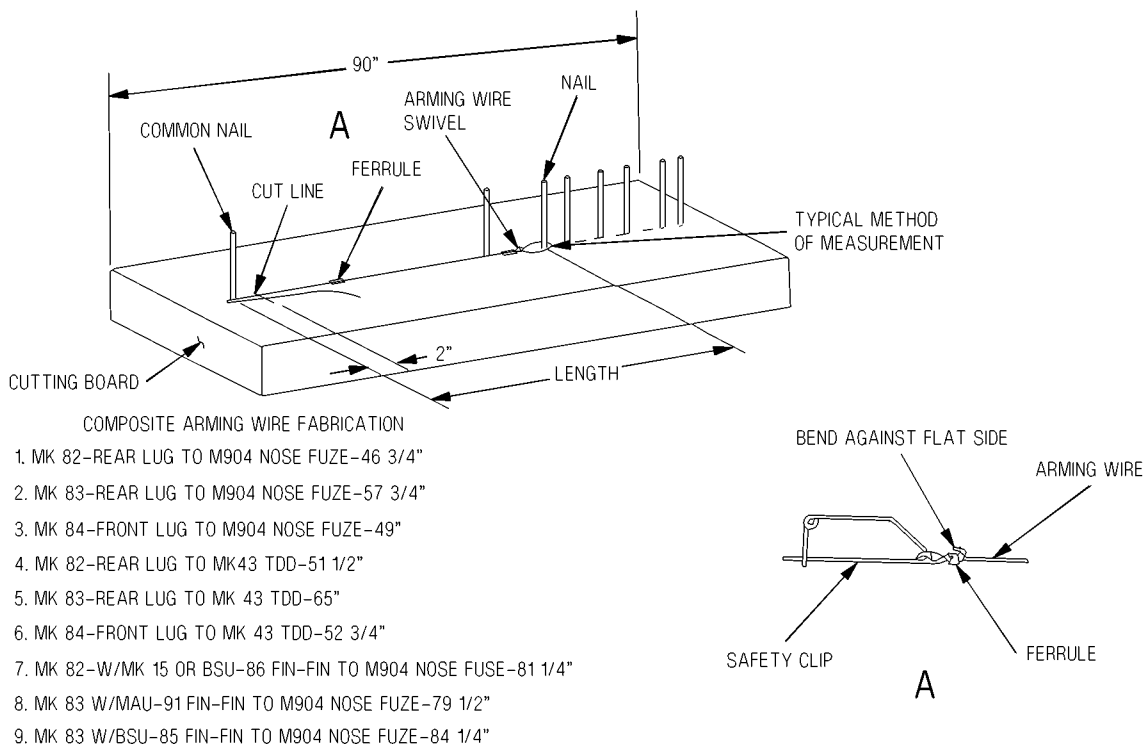
**Figure 5-15. Arming Wire Installation (Sheet 2)**

**A1-F18AE-LWS-000**  
**Common Procedures**

- a. Remove slack from fin release wire.
  - b. Cut fin release wire 10 inches aft of fin.
9. For electric tail fuzes perform the following:
- a. Remove slack from arming wire.
  - b. Cut arming wire 6 inches from point of exit.

5-29. **COMPOSITE ARMING WIRE PREFABRICATION.** The following procedures provide instructions for local prefabrication of (composite) arming wires composed of ferrules, safety clips and swivel and ring assemblies furnished in Arming Wire Accessory Kit Stock No. 1325-01-155-0139 and Mk 1 or Mk 9 arming wires. A prefabrication fixture (board) must be locally manufactured. The board, as shown in Figure 5-16, consists of 1 piece of 2-inch by 4-inch wood at least 90-inches long, and headless nails. Diameter of nails should be 3/16-inch to ensure adequate strength and bend radius of wire at safety clip end. Refer to Table 5-3 for additional arming wire data. Fabricate arming wire as follows (Figure 5-16):

1. Slide one ferrule onto arming wire.
2. Place arming wire swivel loop over appropriate nail.
3. Hold the wire tight and bend free end of the wire around the common nail.
4. Cut the free end of the arming wire at the cut line (2-inches beyond the common nail).



**Figure 5-16. Composite Arming Wire Fabrication**

5. Remove arming wire from fixture.

**NOTE**

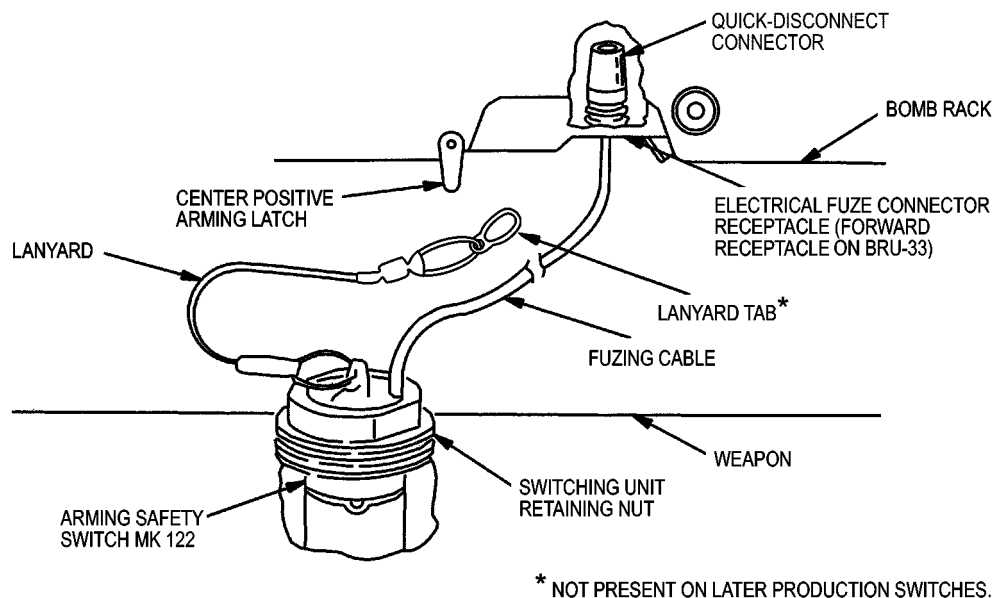
BSU-85 fin to nose fuze arming wire, fabricate after routing through bottom arming wire hole in fin.

6. Thread free end of arming wire through the eye hole of the safety clip.
7. Slide the ferrule over the free end of the arming wire.
8. Bend the free end of the arming wire back against either FLAT SIDE of the ferrule.

5-30. **CONNECTION OF ELECTRIC FUZE ARMING SAFETY SWITCH MK 122.** When directed, connect the electric fuze Arming Safety Switch Mk 122 as follows (Figure 5-17):

**NOTE**

The connection/disconnection of the Safety Switch Mk 122 quick-disconnect connector may be performed as weapon is being uploaded/unloaded. Raise/lower weapon approximately 4 inches from bomb rack and connect/disconnect the connector. Continue with loading/unloading.



**Figure 5-17. Mk 122 Arming Safety Switch**

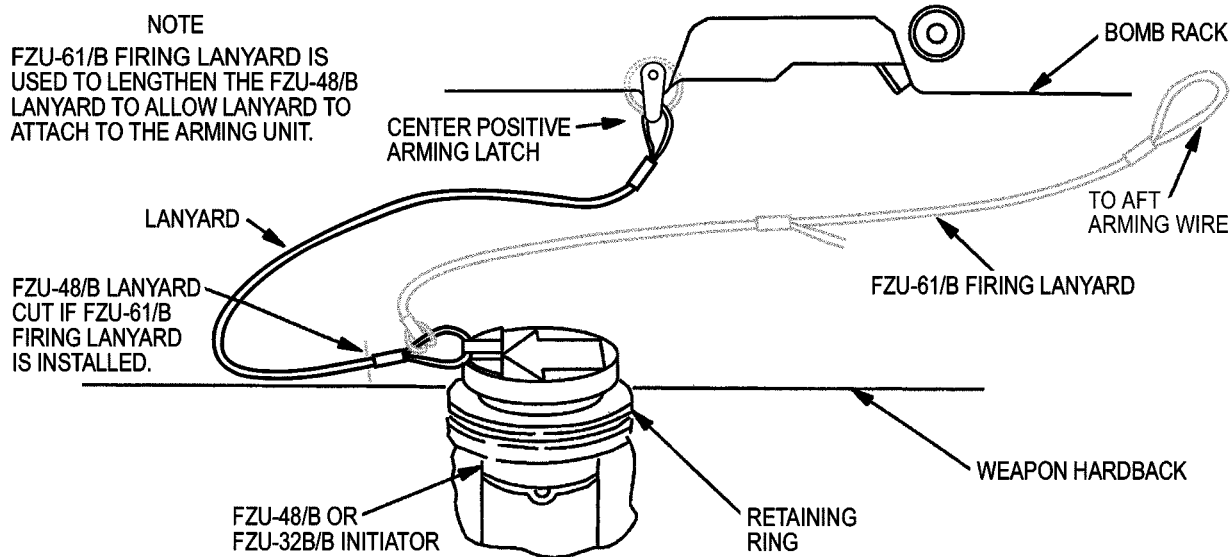
**NOTE**

Use forward receptacle on BRU-33.

1. Insert quick-disconnect connector into bomb rack.
2. Ensure connector is fully seated.
3. Attach lanyard to positive arming latch on bomb rack.
4. Ensure shear wire not broken.

5-31. **CONNECTION OF FZU INITIATOR.** When directed, connect the FZU initiator as follows (Figure 5-18):

1. Attach lanyard to positive arming latch on bomb rack if FZU-61 firing lanyard is not used.
2. Attach FZU-61 firing lanyard to aft arming unit.



**Figure 5-18. FZU-32B/B/FZU-48/B Initiator**

## **5-32. ARMAMENT SUPPORT EQUIPMENT.**

**5-33. BOMB HOIST INSTALLATION.** Install hoist adapters, hoist and hoisting equipment on weapon/store as follows:

1. Hoist adapter and bomb hoist installation (Figure 5-19 and Table 5-4):
  - a. Install hoist adapters.
  - b. Pull approximately 2 feet of cable from bomb hoist and attach boom to hoist adapter.
  - c. Secure the terminal end of hoist cable to the hoist adapter opposite the hoist. Allow the cable to loop under the pylon and above the weapon/store.
2. Single stores trolley and hoisting band installation and rigging (Figures 5-20, 5-21 and Table 5-4).
  - a. Install one anchor fitting in hole number "0" of the hoisting band attachment and one single stores trolley with existing anchor fitting pin.
  - b. Route free end of hoisting band under and around weapon, install second anchor fitting in applicable hole (Table 5-4) in hoisting band required for weapon diameter and attach second single stores trolley with attached anchor fitting pin.
  - c. Position band the specified distance forward of the aft suspension lug (Table 5-4) and ensure the single store trolleys are an equal distance from the vertical centerline of the weapon.
  - d. Rig hoist cable under the single stores trolley pulleys while holding the cable taut to maintain the trolley positions.
  - e. Ensure all pins secure and clutch lever in hoist LOAD position. Operate hoist to take up slack on cable.

### **NOTE**

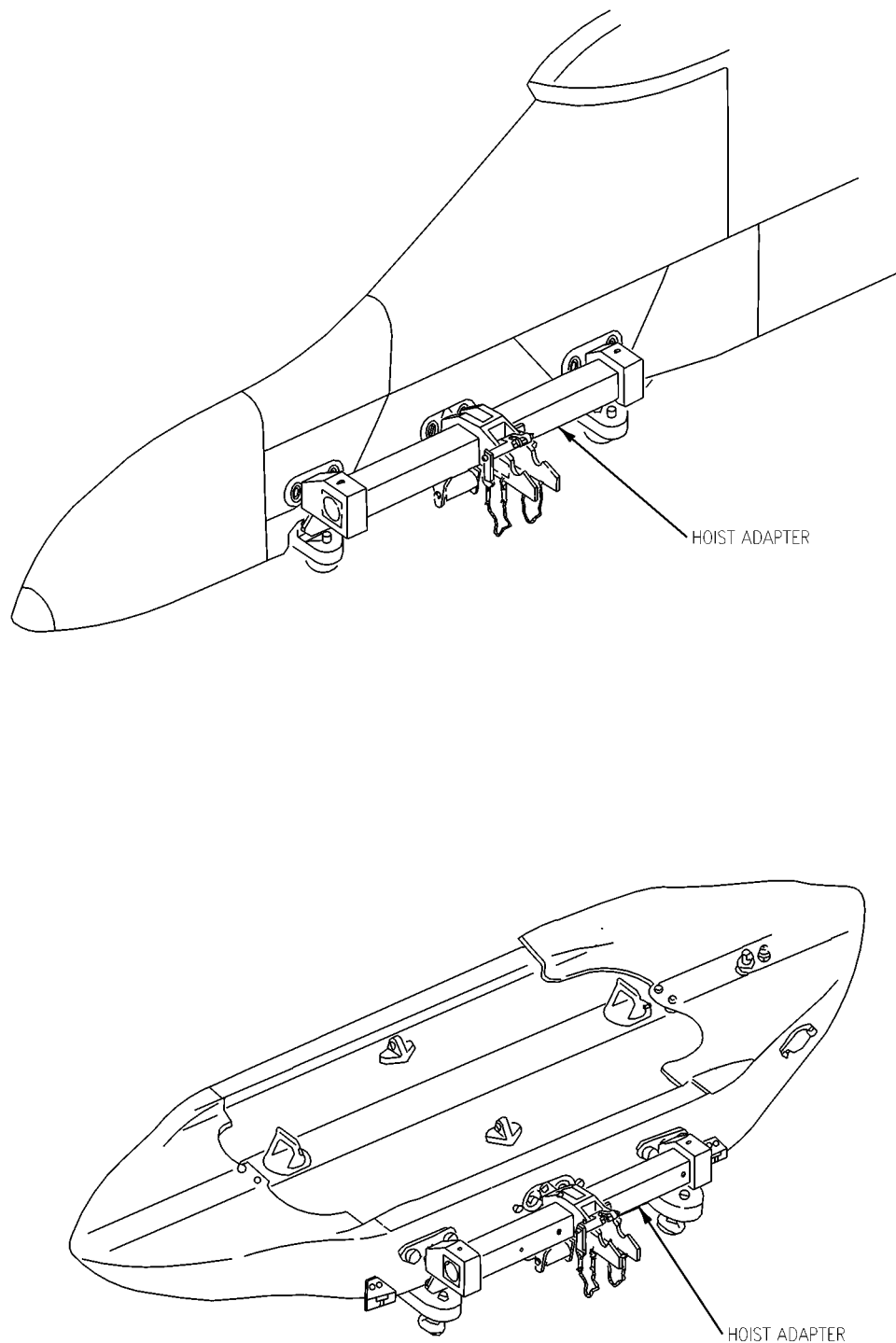
The following steps 3 and 4 are informational only. BRU-33 and LAU-115 preload concept is not authorized. LAU-115C/A cannot be loaded with SHOLS.

3. Unbalanced preloaded BRU-33 trolley adapter installation and rigging (Figure 5-22 and Table 5-4):

### **CAUTION**

Trolley must be installed on preloaded side of BRU-33.

- a. Rig the hoist cable under the trolley pulley.
- b. Secure terminal end of hoist cable to the hoist adapter. Pull enough cable from bomb hoist to allow attachment of trolley to BRU-33.
- c. Install trolley on preloaded side of BRU-33.

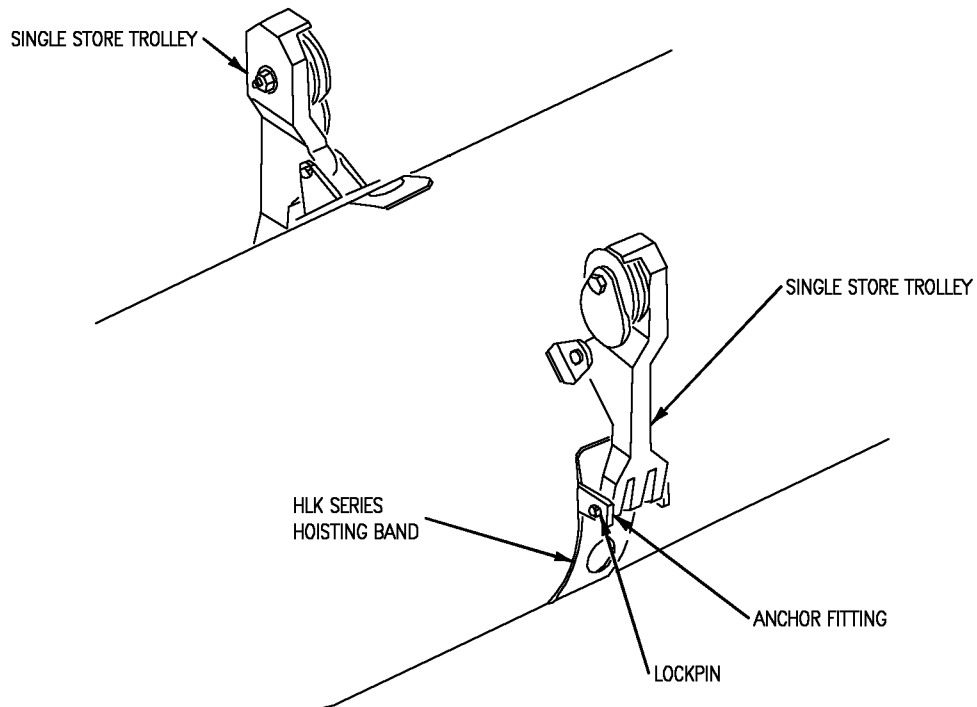


**Figure 5-19. Hoist Adapter (74D750006) Installation**

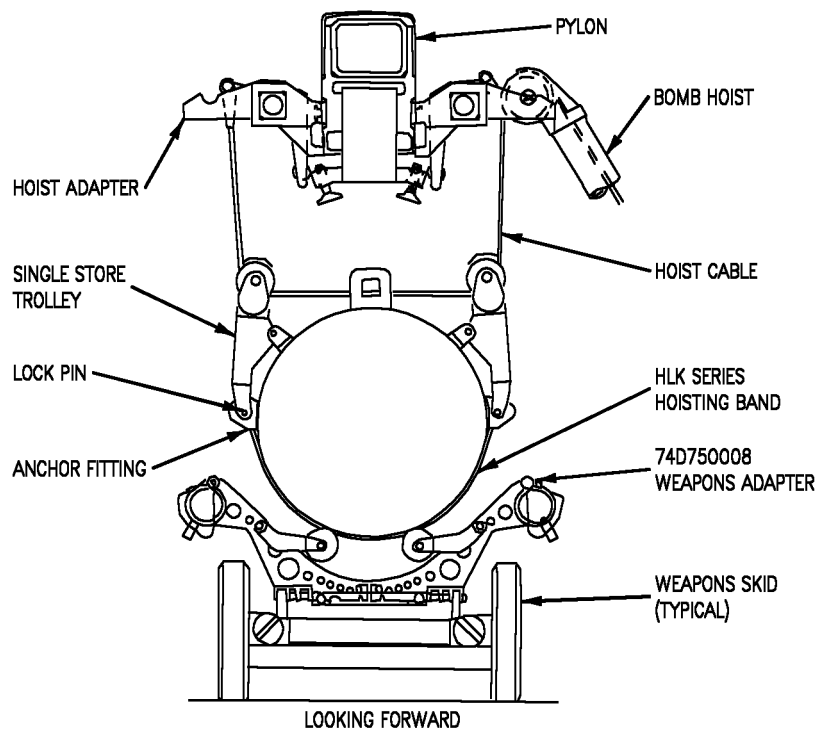


**Table 5-4. BRU-32/33 Single Store Hoisting Band/Adapter Installation**

<b>WEAPON STORE</b>	<b>BAND/ TROLLEY</b>	<b>BAND HOLES FOR TROLLEY (74D750004) INSTALLATION</b>	<b>BAND CENTELINE FROM AFT SUSPENSION LUG CENTERLINE</b>	<b>LOADING HOIST ADAPTER POSITION</b>	<b>NOTE</b>
AGM-65	74D750019	N/A	N/A	D	
AGM-84 (Harpoon)	HLK 275A	0/22	17-1/4 inches	C	1
AGM-84E (SLAM)	HLK 275A	0/22	22-1/4 inches	A	1
AGM-84H (SLAM-ER)	74D750004	N/A	N/A	A	
AGM-84 (ATM)	HLK 275A	0/22	17-1/4 inches	C	1
AGM-88	HLK 268	N/A	N/A	A	
AGM-154A	ADU-783/E	N/A	N/A	D	
ALQ-167	ADU-498/E	N/A	14 inches	E	
AWW-13	ADK 448	N/A	8 inches	E	
GBU-10	HLK 276A	0/32	15 inches	D	
GBU-12	HLK 275A	0/14	7-1/4 inches	D	1, 2
GBU-16	HLK 275A	0/22	7-1/4 inches	D	1
GBU-24	HLK 275A	0/24	17-1/4 inches	C	3
GBU-31(V)2B	HLK 275A	0/30	N/A	D	3
GBU-31(V)4B	HLK 217 HLK 218	N/A	N/A	D	
GBU-32	HLK 275A	0/22	N/A	D	
GBU-35	HLK 275A	0/22	N/A	D	
LAU-10	HLK 275A	0/22	7-1/4 inches	D	1, 4
LAU-61	HLK 276A	0/28	7-1/4 inches	D	4
LAU-68	HLK 275A	0/14	7-1/4 inches	D	1, 4
Mk 20/CBU- 78/99/100/PDU-5	HLK 275A	0/20	7-1/2 inches	D	1
Mk 52	HLK 276A	0/34	7-1/4 inches	D	
Mk 55	HLK 276A	0/48	15-1/4 inches	D	
Mk 56	HLK 276A	0/48	15-1/4 inches	D	
Mk 62	HLK 275A	0/14	7-1/4 inches	D	1, 2
Mk 63	HLK 275A	0/22	7-1/4 inches	D	1
Mk 65	HLK 276A	0/40	15 inches	D	
Mk 77	HLK 276A	0/36	7-1/2 inches	D	
Mk 82/BLU-111	HLK 275A	0/14	7-1/4 inches	D	1, 2
Mk 83/BLU-110	HLK 275A	0/22	7-1/4 inches	D	1, 2
Mk 84/BLU-117	HLK 276A	0/32	15 inches	D	
ATARS	ADK-441	N/A	N/A	D	
<b>NOTES:</b> 1. 276A also authorized 2. BRU-32/33 3. ADU-764 (only 1 required) (band hole 0) (ADU-764A/E, hole A) 4. BRU-33					



**Figure 5-20. Single Store Trolley (74D750004) Installation**



**Figure 5-21. Single Store Rigging (Typical)**

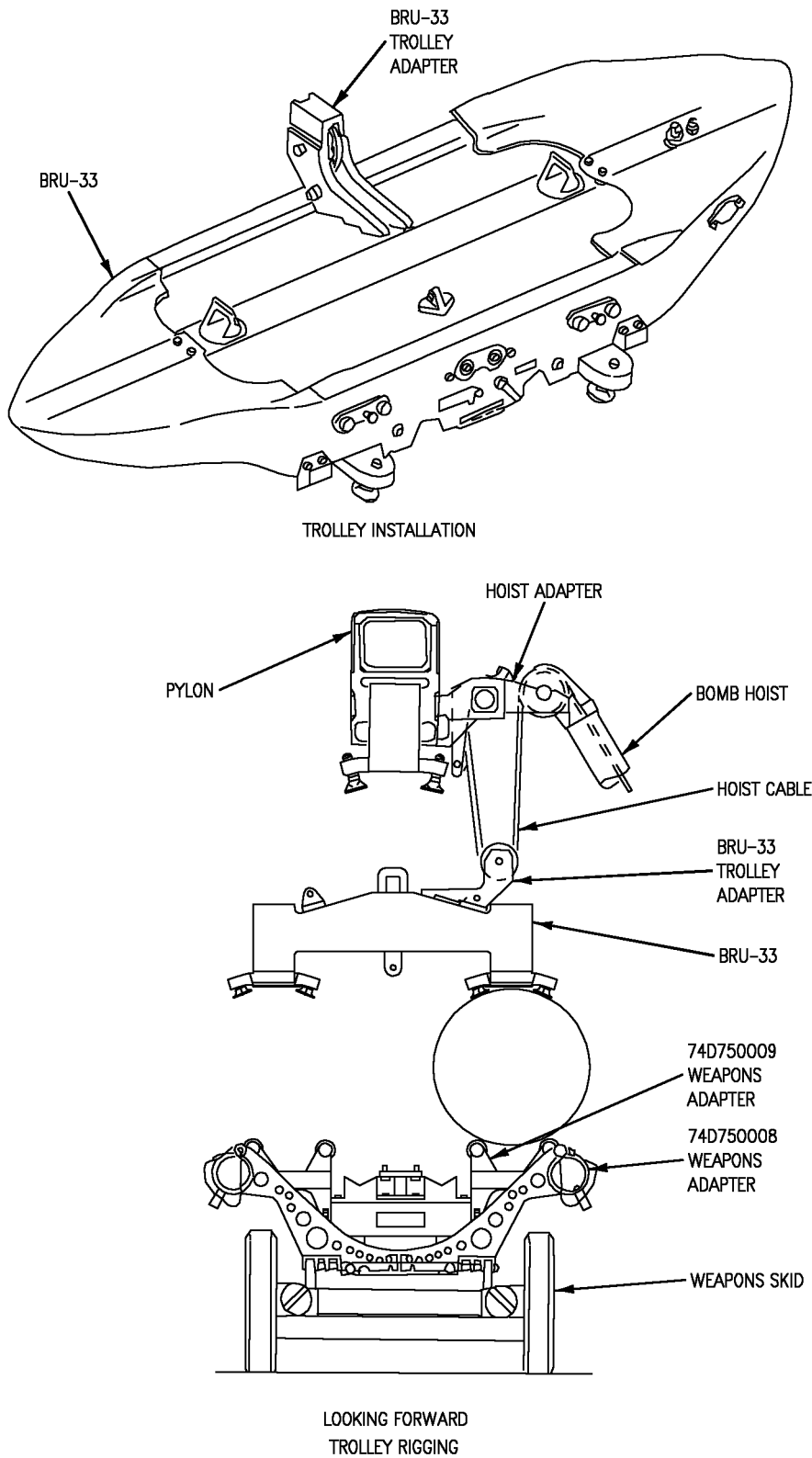


Figure 5-22. Unbalanced Preloaded BRU-33 Trolley Adapter (74D750000) Installation and Rigging

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**Common Procedures**

d. Ensure all pins secure and clutch lever in hoist LOAD position. Operate hoist to take up slack in cable.

4. Balanced preloaded BRU-33 trolley adapter (74D750000) installation and rigging (Figure 5-23 and Table 5-4):

a. Rig the hoist cable under the trolley pulleys.

b. Secure terminal end of hoist cable to the hoist adapter. Pull enough cable from bomb hoist to allow attachment of trolley to BRU-33.

c. Install trolleys on BRU-33.

d. Ensure all pins secure and clutch lever in hoist LOAD position. Operate hoist to take up slack in cable.

5. BRU-33 (previously installed) single stores trolley, hoisting band and adapter installation and rigging (Figures 5-20 and 5-24, and Table 5-4):

a. Mate trolley adapter to BRU-33 lower fitting and secure with ball lock pin.

b. Install one anchor fitting in hole number “0” of the hoisting band and attach one single stores trolley with existing anchor fitting pin.

c. Route free end of hoisting band under and around weapon, install second anchor fitting in applicable hole (Table 5-4) in hoisting band required for weapon diameter and attach second single stores trolley with attached anchor fitting pin.

d. Position band the specified distance forward of the aft suspension lug (Table 5-4) and ensure the single store trolleys are an equal distance from the vertical centerline of the weapon.

e. Pull enough cable from bomb hoist to allow for rigging.

f. Rig the hoist cable through the trolley pulleys while holding the cable taut to maintain the trolley positions.

g. Secure the terminal end of hoist cable to the center hole in the trolley adapter.

h. Ensure all pins secure and clutch lever in hoist LOAD position. Operate hoist to take up slack in cable.

6. Preloaded LAU-117 Maverick trolley installation and rigging (Figure 5-25):

a. Adjust trolleys to the F/A-18 position and install on each side of the launcher.

b. Pull enough cable from bomb hoist to allow for rigging.

c. Rig the hoist cable under the trolley pulleys.

d. Secure the terminal end of the hoist cable to the hoist adapter opposite the hoist.

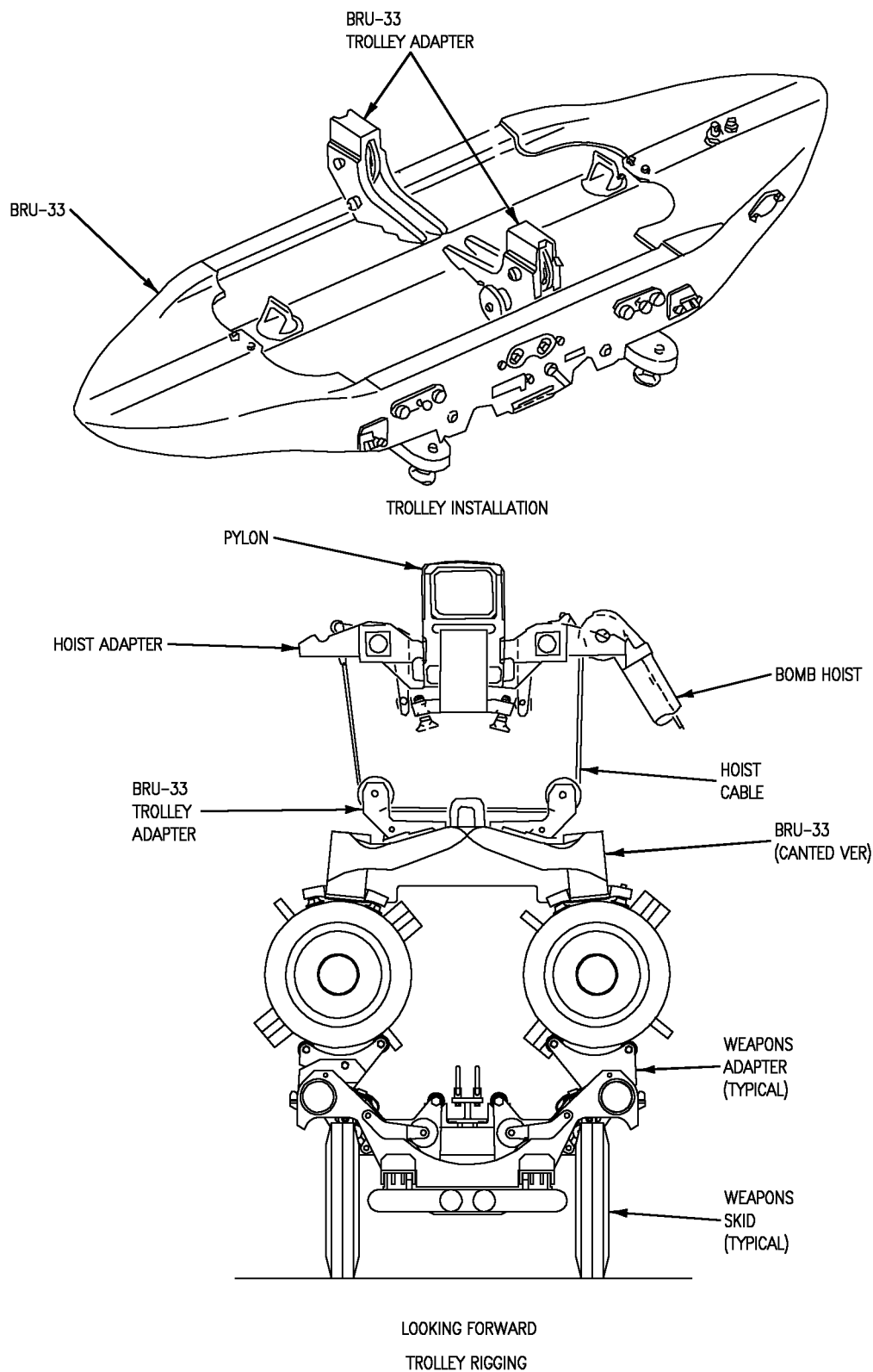


Figure 5-23. Balanced Preloaded BRU-33 Trolley Adapter (74D750000) Installation and Rigging

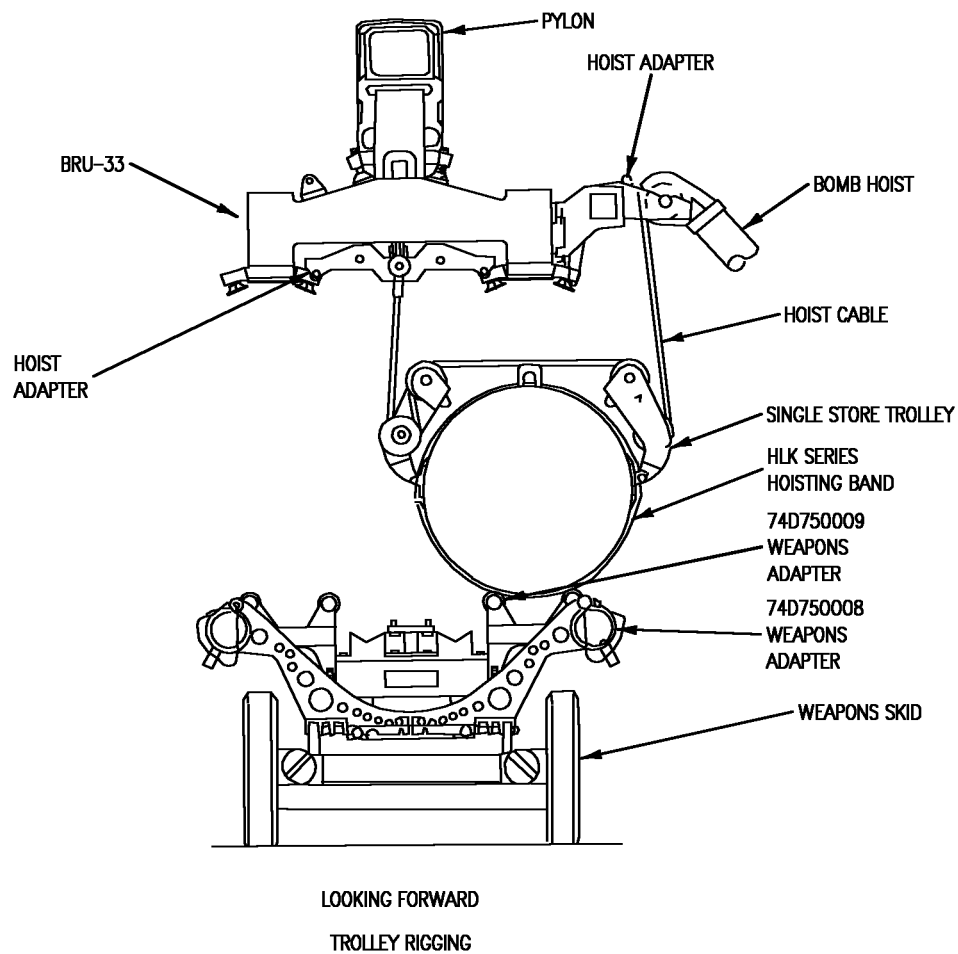
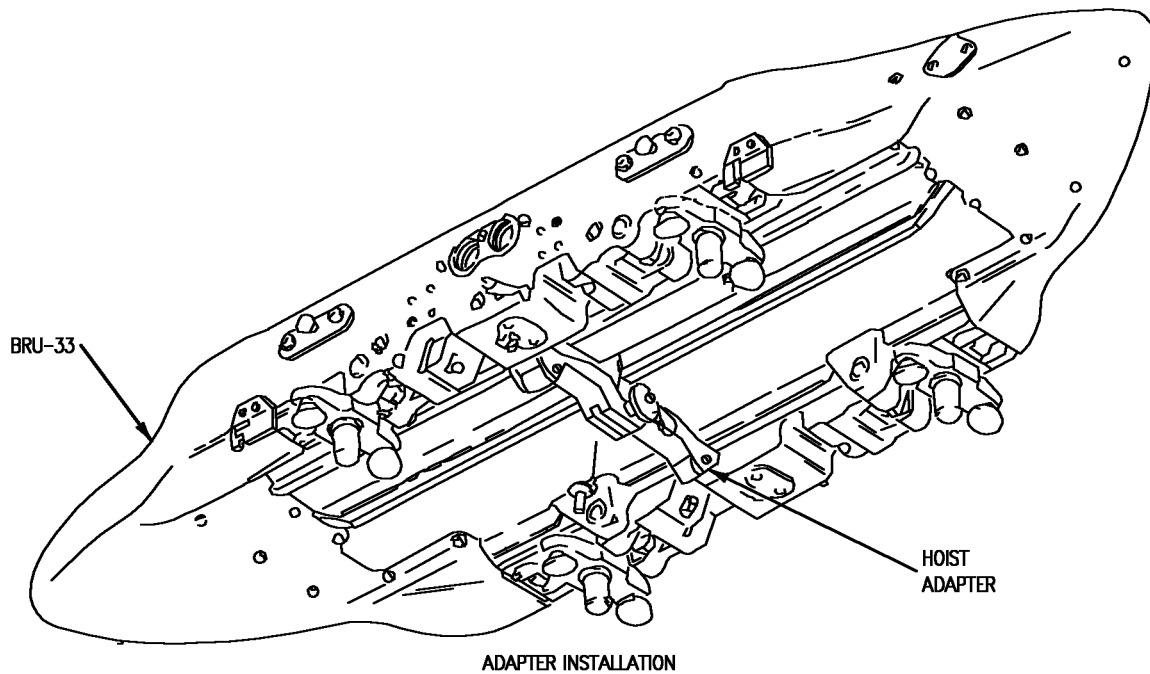


Figure 5-24. BRU-33 Single Store Adapter (74D750024) Installation and Rigging

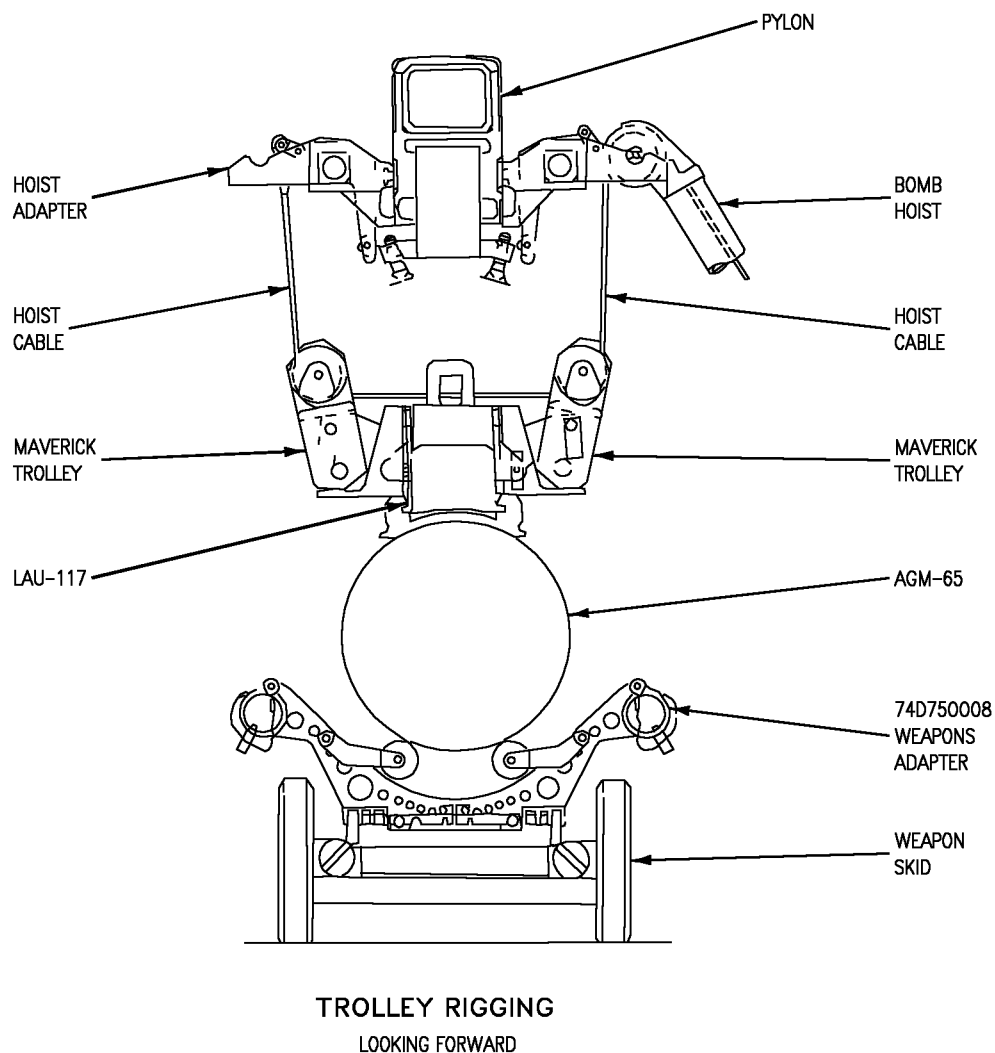
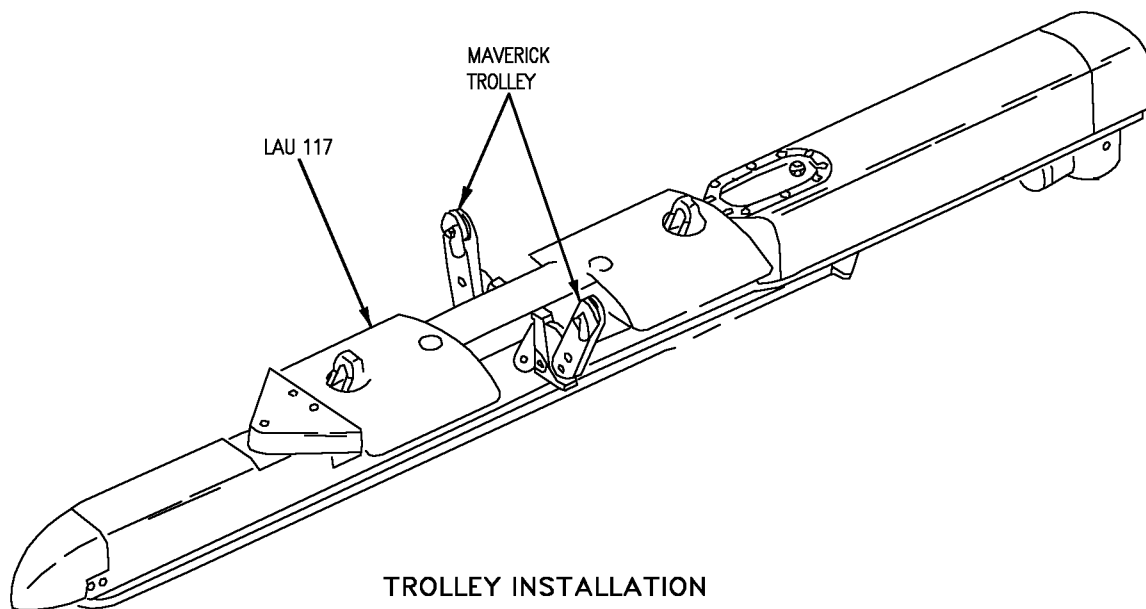


Figure 5-25. LAU-117 Maverick Trolley (74D750019/74D750009) Installation and Rigging

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**Common Procedures**

e. Ensure all pins secure and clutch lever in hoist LOAD position. Operate hoist to take up slack in cable.

7. Preloaded LAU-118 HLK-268 launcher trolley installation and rigging (Figure 5-26):

a. Install each half of the trolley on sides of the launcher and secure with ball lock pins from the bottom side.

b. Pull enough cable from bomb hoist to allow for rigging.

c. Rig the hoist cable under the trolley pulleys.

d. Secure the terminal end of the hoist cable to the hoist adapter opposite the hoist.

e. Ensure all pins secure and clutch lever in hoist LOAD position. Operate hoist to take up slack in cable.

**5-34. STRAY VOLTAGE CHECK.**

5-35. Stray voltage checks must be performed prior to electrical connection of weapons/launchers requiring a stray voltage check.

5-36. Prior to commencing stray voltage check verify that the following has been accomplished:

1. Aircraft positioned in designated area.
2. Aircraft engines turning. Throttles reduced.
3. External power removed.

**WARNING**

Aircrew must place both hands in full view at all times during entire check.

4. Aircrew place both hands in full view and hands remain in view during entire check.

5-37. **STRAY VOLTAGE TEST PROCEDURES.** Perform as follows:

**NOTE**

Prior to and following the use of these test sets for checking any armament circuit, a self test shall be performed to ensure that the test set is functioning properly.

Self test for W30 adapter must be performed in SQB-1 and SQB-2 positions.

1. Perform self test on AN/AWM-54 or AN/AWM-102 test set as follows:

a. AN/AWM-54:

- (1) Connect cable W1 with applicable adapter to test set J1.



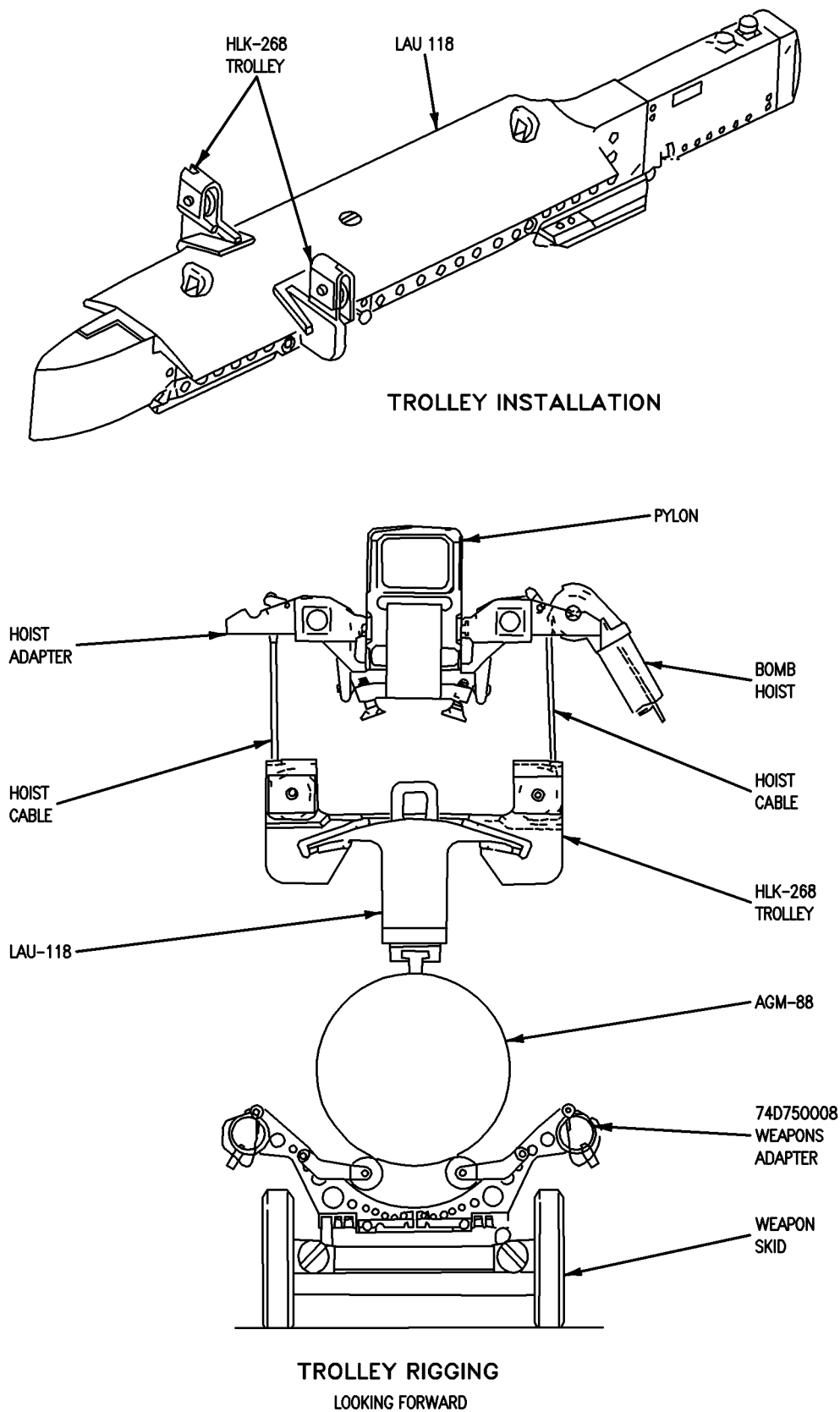


Figure 5-26. LAU-118 HLK-268 Trolley Installation and Rigging

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**Common Procedures**

(2) Position the FCTN switch to the NO GO position.

(3) Press and release the SELF TEST pushbutton. The GO (green) indicator will momentarily illuminate, then the NO GO (red) indicator will illuminate and remain lit while the SELF TEST pushbutton is pressed.

(4) Position the FCTN switch to the GO position.

(5) Press and release the SELF TEST pushbutton. The GO (green) indicator will illuminate while the SELF TEST pushbutton is pressed.

b. AN/AWM-102:

**NOTE**

Test set adapters can only be checked in the self test position.

(1) Connect test cable with applicable adapter to test set connector J1.

(2) Press and release ON/OFF switch - test set displays BIT followed by back-lit display test, then GO.

(3) Press and release SELF switch - test set displays SELF followed by GO.

2. Upon completion of satisfactory self test operation proceed with stray voltage check as follows:

a. Connect test set cable and adapter as follows:

(1) For rocket launchers, connect W2 to rocket cable.

**NOTE**

Self test for W30 adapter must be performed in SQB-1 and SQB-2 positions.

(2) For AGM-65, connect W30 to igniter connectors.

(3) For AGM-88, connect W6 to launcher connector.

b. AN/AWW-54:

(1) Position the FCTN switch to S/V position.

(2) Press and hold the TEST pushbutton.

**WARNING**

If NO GO (red) indication is observed, discontinue test and notify proper authority.

(3) Observe the test set indicators:

(a) A NO GO (red) indication indicates a hazardous condition. Release the TEST pushbutton and disconnect the test set from the circuit under test; discontinue testing.

(b) A GO (green) indication verifies that the circuit under check is go or safe. Release the TEST pushbutton and disconnect the test set from the adapter harness connector/rocket cable.

(c) Perform a self test to verify the test set is working properly.

c. AN/AWM-102:

**NOTE**

If stray voltage is detected, a NO GO will be displayed. Discontinue test and notify proper authority.

(1) Press and release S/V pushbutton.

(2) A NO GO indication indicates a hazardous condition. Disconnect the test set from the circuit under test; discontinue testing.

**NOTE**

To obtain an accurate stray voltage indication of GO, the S/V pushbutton must be pushed and released again. Allow a slight pause from time S/V pushbutton was first pressed and released.

(3) Press and release S/V pushbutton.

(4) A GO indication verifies that the circuit under check is safe. Disconnect the test set from circuit under test.

(5) Perform self test to verify test set is working properly by pressing and releasing the BIT pushbutton - GO indicates test set is working properly; then press and release SELF to verify test cable and adapter is working properly.

**5-38. DATA LINK MARRIAGE CHECK.**

5-39. The following procedures are used to check the operation of a data link pod in conjunction with a SLAM ER weapon on a single or dual aircraft mission.

1. Test Equipment Required.
  - a. None.
2. Technical Directives Required.
  - a. None.
3. Check Preparations.
  - a. (SLAM ER) (If applicable) Remove exit cover.

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**Common Procedures**

- b. Establish cockpit to ground communications.
- c. Perform procedures in Table 5-5.

**5-40. WEAPON INVENTORY/BIT CHECK.**

5-41. The following procedures are used to check the inventory of weapons loaded on aircraft stations and to verify proper interface between aircraft and weapon.

**NOTE**

Upon aircraft power-up, aircraft with MIL-STD-1760 weapons loaded will automatically perform a weapon inventory, followed by BIT for each properly identified weapon.

- 1. Inventory check preparation:
  - a. Weapon(s) loaded with all weapon electrical cables connected and all safety devices installed.
  - b. Aircraft grounded.
  - c. Ensure cartridges are not installed in loaded stations.
  - d. Ensure proper weapon code is entered in weapon insertion panel for each weapon loaded.
  - e. (Pylon stations) Empty stations suspension hooks open.
  - f. Connect electrical power to aircraft.
  - g. (If applicable) Apply cooling.
- 2. Inventory check procedure:

**WARNING**

Prior to applying power, the cockpit switches and controls must be ready to receive power.

- a. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2, and 3 to B ON for 3 seconds.

**NOTE**

To avoid the Caution Advisory page overlay on the DDI, position the MPCD to ON.

- b. Position left and right DDI power switches to DAY (allow warm-up time).
- c. On left or right DDI, press and release the MENU pushbutton until BIT pushbutton option is displayed.

**Table 5-5. Data Link Marriage Check**

CHECK STEP	PROCEDURES	RESULT
<p style="text-align: center;"><b>NOTE</b></p> <p>This table is written to facilitate both a single and dual aircraft mission.</p> <p>Multiple SLAM ER loadout on a single aircraft will require a Tactical or Test Mission loaded via Memory Unit (MU).</p>		
1.	Connect electrical power.	
2.	(If applicable) Apply cooling.	
<p style="text-align: center;"><b>WARNING</b></p> <p>Prior to applying power, cockpit switches and controls must be ready to receive power.</p>		
3.	On the GND PWR control panel, position EXT PWR switch to RESET and back to NORM Set and hold switches 1, 2, and 3 to B ON for 3 seconds.	
4.	Position the left and right DDI power switches to DAY (allow warm-up time).	After warm-up, indicator display appears.
5.	On the left DDI, press and release MENU pushbutton until BIT pushbutton option is displayed.	
6.	On the left DDI, press BIT pushbutton.	(10A and 12A) BIT display appears. SMS GO comes on when BIT is complete.  (13C, 15C and 17C) BIT control display appears. PBIT GO displayed below STORES pushbutton option.
7.	On the right DDI, press and release the MENU pushbutton until STORES pushbutton option is displayed.	
8.	On the right DDI, press STORES pushbutton.	Weapons display appears on right DDI. SAFE is on. (SLAM ER) 1 SLMR TEST then 1 SLMR HOLD or STBY when BIT complete.
9.	On the master arm control panel select A/G.	A/G light comes on.
10.	(Weapon Aircraft) On the right DDI, press SLMR pushbutton.	Box appears around weapon select SLMR with X through it. Box appears around priority station 1 SLMR in wingform display. SLAM ER display appears.
<p style="text-align: center;"><b>WARNING</b></p> <p>A radiation hazard to personnel exists within 48 inches of pod and weapon antenna radome during pod command transmissions.</p>		

**Table 5-5. Data Link Marriage Check (Continued)**

CHECK STEP	PROCEDURES	RESULT
11.	(Pod aircraft) On the right DDI, select the data link pod.	Box appears around weapon select data link pod.
12.	(Pod aircraft) On the right DDI, select WPN, then SLMR.	
NOTE		
Additional channel numbers may be obtained from the TAC manual. The channel/ID numbers 4 and 28 are default numbers for weapon without MU loaded.		
13.	(AWW-13 Pod aircraft) On the right DDI, press CHID. On the UFC, press weapon channel number -4, then press ENTER.	VTR appears next to XMTR. Video is present on DDI. (SLAM ER) SLAM ER-IN VIDEO is displayed.
14.	(AWW-13 Pod aircraft) On the UFC, press ID, press the channel code numbers -28, then press ENTER.	
15.	(Pod aircraft) On the right DDI, press and hold the XMTR pushbutton, then release when VTR appears.	
16.	(Pod aircraft) On the right DDI, select the aft antenna as follows:  (13C, 15C or 17C) Press and release AUTO FWD pushbutton option.  (10A or 12A) Press and release pushbutton switch 2 until A ANT is displayed.	On the right DDI, ANT AFT is displayed.
17.	(Pod aircraft) On the right DDI, deselect the aft antenna as follows:  (13C, 15C or 17C) Press and release ANT AFT pushbutton option.  (10A or 12A) Press and release A ANT pushbutton option.	On the right DDI, A ANT is displayed at pushbutton switch 2.
18.	(Pod aircraft) On the right DDI, press XMTR.	On the right DDI, ANT FWD is displayed.
19.	(Pod aircraft) On the right DDI, deselect the data link weapon type.	On the right DDI, A ANT is moved and F ANT is displayed.
20.	(Weapon aircraft) On the right DDI, deselect the weapon type SLMR.	VTR goes off. Receiver noise replaces video on DDI. (SLAM ER) FROZEN displayed.
21.	On the master arm control panel, deselect A/G.	Box is removed from data link pod.
22.	Position the left and right DDI power switches to off.	Box is removed from SLMR.
23.	On the GND PWR control panel, position the EXT PWR switch to OFF.	The A/G light goes off.
24.	(SLAM ER) (If applicable) Reinstall exit cover.	Display areas off.

**NOTE**

(91C, 13C, 13C SMUG and 15C) The BIT control display will indicate PBIT GO when BIT is completed.

- d. On left or right DDI, press and release the BIT pushbutton (allow BIT to run).
- e. On left or right DDI, press and release the MENU pushbutton until STORES pushbutton option is displayed.
- f. On DDI press STORES pushbutton - Weapon inventory is displayed.

**NOTE**

Weapon inventory will consist of the number of weapons and the proper weapon acronym for all stations with weapons loaded.

- g. Verify that weapon inventory displayed corresponds with weapons loaded.
- h. Position the left and right DDI power switch to OFF.
- i. On the GND PWR control panel, position the EXT PWR switch to OFF.
- j. (If applicable) remove power from aircraft.

**5-42. GENERAL FUZE HANDLING AND SAFETY PRECAUTIONS.**

5-43. **FUZE PROCEDURES.** The following procedures provide general instructions and precautions to be observed when handling all fuzes. Specific procedures for the inspection, installation, and removal of those fuzes which are normally installed by the loading crew are covered in the applicable loading section. Specific procedures for inspecting those fuzes which are normally installed prior to delivery of the weapon to the loading crew or which are used only in a particular weapon are contained in the applicable weapon loading sections.

5-44. The following procedures provide general instructions and precautions to be observed in the handling of all fuzes which are normally installed by the loading crew:

- 1. Fuzes contain high explosives and must be handled carefully. Take every precaution to prevent fuze damage. All fuzes must be maintained in a suitable handling container prior to installation and after removal from a weapon.
- 2. Prior to installation in a weapon and as soon as possible after flight or aborted flight, fuzes must be inspected to ensure that they are in a safe or unarmed condition. In addition to items listed in individual fuze inspection procedures, inspect all fuzes for bent or deformed arming vanes, damaged or dirty threads, loose booster cups, missing or damaged components, and evidence of rust or corrosion. Except for cleaning threads, do not attempt to repair fuzes.
- 3. Since some fuzes can be fully armed by turning the arming vane at any speed, either by hand or by allowing it to windmill, a fuze must have either a safety pin/wire or an arming wire/safety clip installed at all times to prevent arming.

**WARNING**

If arming wire, safety pin/wire, safety clip or any component is missing or damaged, treat the fuze as armed. Do not attempt to disarm or remove any fuze suspected of being partially or fully armed. Attempts to disarm a fuze by reverse rotation of arming vane can detonate the fuze. Notify proper authority immediately for removal and disposal.

4. Do not remove the safety pin/wire or safety clip from any fuze until after the arming wire is installed. Retain safety pin or other protective devices for use in the event that weapons must be downloaded. A safety clip or short length of arming wire with the ends twisted together securely may be used in place of a safety pin.

5. Do not bend or deform the arming vane of any fuze.

6. Except when specified, do not use tools for installation or removal of fuzes. Most fuzes are installed only hand tight.

7. Fuzes must be installed after the weapon is loaded on the aircraft. Exceptions to this rule are only authorized for fuzes which must be installed during weapon assembly and for those cases where clearance will not permit fuzing after loading.

8. Fuzes must not be disassembled or tested for proper functioning. No attempt shall be made to repair any fuze or render any fuze inert.

9. Ensure that fuzes are fully seated in the bomb.

10. If only a tail fuze is being used, a steel nose plug and support cup must be installed in the nose of the bomb.

11. (Inert Mk 80 series and BDU-45/B practice bombs) A steel nose plug and support cup is not required when using a tail fuze or Mk 89 spotting charge adapter, but the plastic shipping plug and fuze set screws must be removed due to potential FOD hazard.

12. Extreme care must be exercised when installing fuzes to prevent cross threading of the fuze in the bomb cavity.

13. Arming vanes must not be used as leverage to install or remove fuzes. They must not be bent, struck or handled in any manner to degrade fuze reliability.

14. If the lanyard on the Mk 122 arming safety switch is pulled, the switch is no longer operable and the entire Mk 122 assembly must be replaced.

#### **5-45. EMERGENCY PROCEDURES.**

5-46. **FIREFIGHTING.** Conventional weapons, rocket, CBU and general purpose bomb cook off times are contained in NAVAIR 00-80R-14.

5-47. **MEDICAL.** Medical requirements for the given type weapon operations shall be as directed by fleet commander or higher authority.



5-48. **SECURITY.** Security requirements for the given type of weapon operations shall be as directed by fleet commander or higher authority.

**5-49. AIRCRAFT ARMING AND SAFING SIGNALS.**

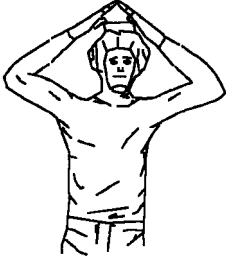
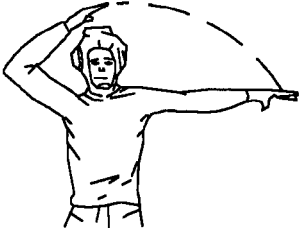

5-50. The standardized aircraft arming and safing signals presented in Table 5-6 shall be used, as applicable, during arming and safing operations and during stray voltage check.

**5-51. ARMAMENT WEAPONS SUPPORT EQUIPMENT (AWSE).**

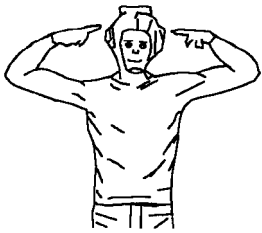
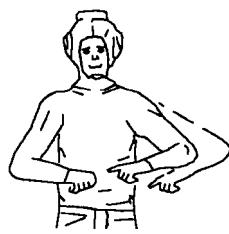


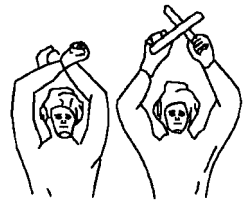
5-52. Armament Weapons Support Equipment (AWSE) is equipment required to support weapon/stores handling and loading, protect personnel and equipment, and test aircraft systems. AWSE is divided into Armament Support Equipment (ASE) and Weapons Support Equipment (WSE).

5-53. **ARMAMENT SUPPORT EQUIPMENT (ASE) FOR WEAPONS HANDLING AND LOADING.** The Armament Support Equipment (ASE) and ASE combinations for weapon/store handling and loading is presented in matrix form. To determine the proper ASE for handling and loading a particular weapon/store, refer to Table 5-7.

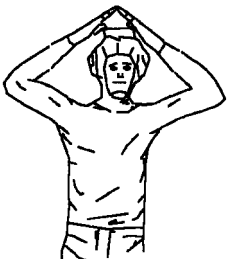
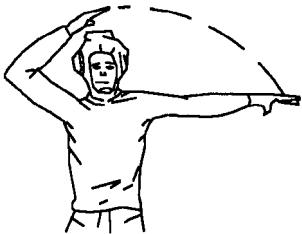
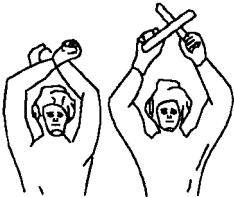

**Table 5-6. Aircraft Arming and Safing Signals**

SIGNAL		MEANING	RESPONSE
DAY	NIGHT		
<p>1. Arming Supervisor: Hands over head with finger tips touching.</p> 	<p>RED banded wands over head with tips touching.</p>	<p>Pilot/Aircrew: Check all armament switches OFF or SAFE.</p>	<p>Pilot/Aircrew: Raise both hands into view of arming supervisor after checking switch positions.</p> <p>(Hands remain in view during check and hookup).</p>
<p>2. Arming Supervisor: One hand over head; point to arming crew- members with other hand.</p> 	<p>Same as day, but with RED banded wands.</p>	<p>Arming Crew: Perform stray voltage checks.</p>	<p>Arming Crew: Give “thumbs up” to arming supervisor if no stray voltage exists. “Thumbs down” indicates stray voltage problems.</p> <p>Night: Vertical sweep with flashlight indicates no stray voltage. Horizontal sweep indicates stray voltage.</p>
<p>3. Arming Supervisor: Raise fist, extended upward to meet horizontal palm of other hand.</p> 	<p>Form a tee with RED banded wands.</p>	<p>Arming Crew: Arm weapons (as applicable).</p>	<p>Arming Crew: Give arming supervisor “thumbs up” when arming completed and clear immediate area. “Thumbs down” if malfunction exists.</p> <p>Night: Vertical sweep with flashlight indicates arming completed. Horizontal sweep indicates malfunction.</p>

**Table 5-6. Aircraft Arming and Safing Signals (Continued)**

SIGNAL		MEANING	RESPONSE
DAY	NIGHT		
<p>4. Arming Supervisor: Raise both hands with fingers pointing to sound attenuators.</p> 	<p>Same as day. Tips of RED banded wands touching sound attenuators.</p>	<p>Arming Crew: Perform missile check.</p>	<p>Pilot: Give arming supervisor “thumbs up” if tone is heard. “Thumbs down” if no tone.</p> <p>Night: Same as signal 3 above.</p>
<p>5. Arming Supervisor: Insert finger of one hand into clenched fist of other hand and give extracting motion.</p> 	<p>Touch tips of RED banded wands in front of body. Then move one wand laterally in a sweeping motion.</p>	<p>Arming crew: Remove bomb rack/pylon safety pins.</p>	<p>Arming Crew: Show pins to arming supervisor and clear immediate area.</p> <p>Night: Same as signal 3 above.</p>
<p>6. Arming Supervisor: Give pilot</p> <p>(a) Thumbs up.</p>  <p>(b) Thumbs down.</p> 	<p>(a) Vertical sweep with RED banded wand.</p> <p>(b) Horizontal sweep with RED banded wand.</p>	<p>Pilot:</p> <p>(a) Aircraft armed and all personnel and equipment clear.</p> <p>(b) Aircraft down for weapons.</p>	<p>Pilot:</p> <p>(a) Acknowledge with similar signal.</p> <p>(b) Acknowledge with similar signal.</p>
<p>7. Arming Supervisor/ Observer:</p> <p>Crossed arms over head, fists clenched.</p> 	<p>Crossed standard RED wands held over head.</p>	<p>Suspend all arming/safety operations on aircraft.</p>	<p>Suspend arming and await further instructions.</p>

**Table 5-6. Aircraft Arming and Safing Signals (Continued)**

SIGNAL		MEANING	RESPONSE
DAY	NIGHT		
<p>1. Safing Supervisor: Hands over head with finger tips touching.</p> 	<p>RED banded wands over head with tips touching.</p>	<p>Pilot/Aircrew: Check all armament switches OFF or SAFE.</p>	<p>Pilot/Aircrew: Raise both hands into view of arming supervisor after checking switch positions. (Hands remain in view during safing).</p>
<p>2. Safing Supervisor: One hand over head; point to safing crewmembers with other hand.</p> 	<p>Same as day but with RED banded wands.</p>	<p>Safing Crew: Safe weapons (as applicable).</p>	<p>Safing Crew: After safing, give safing supervisor "thumbs up" and move clear of aircraft.</p> <p>Night: Vertical sweep with flashlight when safing is complete.</p>
<p>3. Safing Supervisor/ Observer: Crossed arms over head, fists clenched.</p> 	<p>Crossed standard RED wands held over head.</p>	<p>Suspend all arming/ safety operations on aircraft.</p>	<p>Suspend safing and await further instructions.</p>
<p>4. Safing Supervisor: Give pilot "thumbs up".</p> 	<p>Vertical sweep with RED banded wand.</p>	<p>Pilot: Aircraft is safed and crew and equipment are clear.</p>	<p>Pilot: Acknowledge with similar signal.</p>

**Table 5-7. Armament Support Equipment (Part I)**

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	MK 82/BLU-111/BDU-45	MK 83/BLU-110	MK 84/BLU-117	MK 62	MK 63	GBU-12	GBU-16	GBU-10	GBU-24/GBU-31(V)4B	GBU-31(V)2B	GBU-32/35	MK 20/BU-59/PDU-5	CBU-78	LAU-10/LAU-68	LAU-61	SUU-25	MK 77	MK 52	MK 55/MK 56	MK 65	NOTES
<b>MANUAL</b>	X	X	L	L		L	L	L						L	L	L	L	L					
HLU-256/AERO 66	X	X	L	L		L	L																
HLU-196/HLU-288	X	X																					1
• SST 74D750004 • HLK 275 • HLK 275/A	X	X	L	L		L	L	L	L					L	L	L		L					2
• SST 74D750004 • HLK 276	X	X		L			L		L								L		L	L			2
• SST 74D750004 • HLK 276A • HLK 279	X	X		L	L		L		L								L		L	L	L	L	2
• SST 74D750063 • HLK 276A • HLK 279					L																		2
• SST 74D750023 • 74D750024 • HLK 275	X	X	L	L		L	L							L	L	L							2
• SST 74D750023 • 74D750024 • HLK 276	X	X		L			L										L						2
• SST 74D750023 • 74D750024 • HLK 276A	X	X		L			L																2
• 74D750004 • HLK 275A/276A • ADU-764	X	X									L	L											2, 3
• 74D750006 • HLK 217 • HLK 218	X	X									L												4
<b>MHU-12C</b>	X	X	T	T		T	T							T	T					T			
• AERO 64B	X	X														T	T	T	T				
<b>MHU-191</b>	X	X																					
• AERO 58	X	X	T	T	T	T	T	T	T					T	T	T	T	T		T	T	T	
• AERO 58 • AERO 64A	X	X						T	T				T	T	T	T	T	T	T				

Table 5-7. Armament Support Equipment (Part I) (Continued)

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	MK 82/BLU-111/BDU-45	MK 83/BLU-110	MK 84/BLU-117	MK 62	MK 63	GBU-12	GBU-16	GBU-10	GBU-24/GBU-31(V)4B	GBU-31(V)2B	GBU-32/35	MK 20/BU-59/PDU-5	CBU-78	LAU-10/LAU-68	LAU-61	SUU-25	MK 77	MK 52	MK 55/MK 56	MK 65	NOTES
<b>MHU-191 (Cont.)</b>	X	X																					
• AERO 58 • AERO 483	X	X	T	T		T	T	T						T	T	T	T	T					5
• AERO 58 • AERO 405	X	X								T	T	T											
• AERO 58 • AERO 511	X	X	T			T		T															6
• AERO 58 • AERO 433 • AERO 434	X	X							T	T	T	T											
• AERO 73 • AERO 74	X	X	T	T		T	T	T						T	T	T	T	T					6, 7
• ADU-400 • ADU-397	X	X	TL	TL	TL	TL	TL	TL	TL	TL				TL	TL	TL	TL	TL		TL	TL	TL	1
• 74D750008	X	X	T	T	T	T	T	T	T	T				T	T	T	T	T		T	T	T	
• 74D750008 • AERO 64A	X	X						T	T							T	T	T	T				
• 74D750008 • 74D750009	X	X	T	T		T	T	T	T					T	T	T	T	T					
<b>MHU-126</b>		X																					
• AERO 58		X	T	T	T	T	T							T	T	T	T	T					
• AERO 58 • AERO 64A		X														T	T	T	T				
• AERO 58 • AERO 483		X	T	T		T	T							T	T	T	T	T					
• AERO 58 • AERO 405		X							T			T								T	T	T	
• AERO 58 • AERO 511		X	T	T		T	T	T															6
• AERO 73 • AERO 74		X	T	T		T	T							T	T	T	T	T					6, 7
• AERO 58 • ADU-433 • ADU-434		X						T	T		T												
• 74D750008		X	T	T	T	T	T	T	T					T	T	T	T	T		T	T	T	
• 74D750008 • AERO 64		X						T	T							T	T	T			T		
• 74D750008 • 74D750009		X	T	T		T	T							T	T	T	T	T					

Table 5-7. Armament Support Equipment (Part I) (Continued)

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	MK 82/BLU-111/BDU-45	MK 83/BLU-110	MK 84/BLU-117	MK 62	MK 63	GBU-12	GBU-16	GBU-10	GBU-24/GBU-31(V)4B	GBU-31(V)2B	GBU-32/35	MK 20/BU-59/PDU-5	CBU-78	LAU-10/LAU-68	LAU-61	SUU-25	MK 77	MK 52	MK 55/MK 56	MK 65	NOTES
<b>MHU-126 (Cont.)</b>		X																					
• 74D750008 • ADU-433 • ADU-434		X							T	T													
• 74D750008 • AERO 64A • ADU-433/434		X							T														
• ADU-406 • AERO 58		X	T	T	T	T	T			T	T			T	T	T	T	T		T	T	T	
• ADU-406 • AERO 58 • AERO 64		X														T	T	T	T				
• ADU-406 • AERO 58 • AERO 483		X	T			T								T	T	T	T	T					
• ADU-406 • ADU-400 • ADU-397		X	T L	T L	T L	T L	T L							T L	T L	T L	T L	T L		T L	T L	T L	1
• ADU-406 • AERO 58 • ADU-511		X						T	T														6
• ADU-406 • AERO 58 • ADU-433/434		X							T														
<b>MHU-202</b>		X																					
• AERO 58		X	T	T	T	T							T				T						
• AERO 58 • ADU-433/434		X		T	T		T	T	T	T	T			T	T	T		T		T	T	T	7, 8
• AERO 58 • AERO 64		X																	T				
• AERO 58 • ADU-483		X	T			T							T						T				6
• AERO 58 • ADU-483 • ADU-433/434		X														T		T					6
• AERO 58 • ADU-405		X									T							T					
• AERO 58 • ADU-405 • ADU-433/434		X									T												
• AERO 58 • ADU-511		X	T																				6
• 74D750008		X	T	T	T								T				T		T				
• 74D750008 • ADU-433/434		X														T		T					

Table 5-7. Armament Support Equipment (Part I) (Continued)

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	MK 82/BLU-111/BDU-45	MK 83/BLU-110	MK 84/BLU-117	MK 62	MK 63	GBU-12	GBU-16	GBU-10	GBU-24/GBU-31(V)4B	GBU-31(V)2B	GBU-32/35	MK 20/BU-59/PDU-5	CBU-78	LAU-10/LAU-68	LAU-61	SUU-25	MK 77	MK 52	MK 55/MK 56	MK 65	NOTES
<b>MHU-125</b>		X																					
• AERO 58		X	T	T	T	T	T							T	T	T	T	T		T	T	T	
• AERO 58 • AERO 64A		X						T	T	T	T					T	T	T	T				
• AERO 58 • ADU-483		X	T			T								T	T	T	T	T					6
• AERO 58 • ADU-405		X						T	T	T	T												
• AERO 58 • ADU-433 • ADU-434											T												
<b>AERO 51/A/M 32 K-4</b>		X																					
• CHOCKS		X	T	T	T	T	T	T	T	T		T		T	T	T	T	T		T	T	T	9
• AERO 74		X	T	T		T	T							T	T	T	T	T					6, 10
• MHU-63		X	T	T		T	T							T	T	T	T	T					
• MHU-65		X			T														T	T	T	T	
• MHU-125 • AERO 58		X	T	T	T	T	T							T	T	T	T	T		T	T	T	
• MHU-125 • AERO 58 • AERO 64		X						T	T	T			T			T	T	T	T				
• MHU-125 • AERO 58 • AERO 483		X	T			T								T	T	T	T	T					
• MHU-125 • AERO 58 • AERO 405		X						T	T	T	T	T											
• MHU-125 • AERO 58 • AERO 433 • ADU-434											T												



Table 5-7. Armament Support Equipment (Part I) (Continued)

X - LOCATION  L - LOAD  T - TRANSPORT	SHIPBOARD	SHOREBASE	MK 82/BLU-111/BDU-45	MK 83/BLU-110	MK 84/BLU-117	MK 62	MK 63	GBU-12	GBU-16	GBU-10	GBU-24/GBU-31(V)4B	GBU-31(V)2B	GBU-32/35	MK 20/BU-59/PDU-5	CBU-78	LAU-10/LAU-68	LAU-61	SUU-25	MK 77	MK 52	MK 55/MK 56	MK 65	NOTES	
MHU-151/MHU-185		X																						
• AERO 74		X	T	T		T	T							T	T	T	T	T					6, 10	
• MHU-63		X	T	T		T	T							T	T	T	T	T						
• MHU-65		X			T														T	T	T	T		
• MHU-125 • AERO 58		X	T	T	T	T	T							T	T	T	T	T		T	T	T		
• MHU-125 • AERO 58 • AERO 64A		X						T	T	T						T	T	T	T					
• MHU-125 • AERO 58 • ADU-483		X	T			T								T	T	T	T	T						
• MHU-125 • AERO 58 • ADU-405		X						T	T	T		T												
• MHU-125 • AERO 58 • ADU-433 • ADU-434											T													
MK 7 MODS		X	T L	T L	T L	T L	T L	T L	T L					T L	T L	T L	T L	T L	T L		T L	T L	T L	1
• AERO 87 • AERO 58		X	T L	T L	T L	T L	T L	T L	T L					T L	T L	T L	T L	T L	T L		T L	T L	T L	1
• AERO 87 • AERO 58 • AERO 64A		X														T L	T L	T L	T L				1	
• AERO 87 • AERO 58 • ADU-405		X																						
• AERO 87 • AERO 58 • ADU-433/434		X																						

Table 5-7. Armament Support Equipment (Part I) (Continued)

<b>X - LOCATION</b> <b>L - LOAD</b> <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	MK 82/BLU-111/BDU-45	MK 83/BLU-110	MK 84/BLU-117	MK 62	MK 63	GBU-12	GBU-16	GBU-10	GBU-24/GBU-31(V)4B	GBU-31(V)2B	GBU-32/35	MK 20/BU-59/PDU-5	CBU-78	LAU-10/LAU-68	LAU-61	SUU-25	MK 77	MK 52	MK 55/MK 56	MK 65	NOTES
AS 32 K-1		X																					1
• FORK ROLLERS		X	T L	T L	T L	T L	T L	T L	T L	T L				T L	T L	T L	T L	T L		T L	T L	T L	1
• AERO 74		X	T L	T L		T L	T L							T L	T L	T L	T L	T L					1, 6, 10
• MHU-63		X	T L	T L		T L	T L							T L	T L	T L	T L	T L					1
• MHU-65		X			T L														T L	T L	T L	T L	1
• MHU-125 • AERO 58		X	T L	T L	T L	T L	T L							T L	T L	T L	T L	T L		T L	T L	T L	1
• MHU-125 • AERO 58 • AERO 64A		X														T L	T L	T L	T L				1
• MHU-125 • AERO 58 • ADU-405		X						T L	T L	T L	T L	T L											1
• MHU-125 • AERO 58 • ADU-433 • ADU-434		X									T L												

Table 5-7. Armament Support Equipment (Part II)

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
MANUAL	X	X	L	L	L							L	L	L	L		L	L	L	L	L	L					L		11
HLU-196/HLU-288	X	X																											1
• SST 74D750004 • HLK-275 • HLK-275/A	X	X					L																						2
• SST 74D750004 • HLK-276	X	X					L																						2
• SST 74D750004 • HLK-276A	X	X					L																						2
• SST 74D750004 • ADK-448	X	X																	L										2
• 74D750009	X	X				L																							2
• 74D750019	X	X				L																							2
• HLK-268	X	X							L																				2, 12
• 74D750032	X	X	L																										2
• SST 74D750004 • HLK-277	X	X																											2
• 74D750030 • 74D750003	X	X	L																										
• SST 74D750004 • ADU-498	X	X																								L			2
• SST 74D750004	X	X						L																					2, 13
• 74D750006-1001/1002 • ADU-783/E	X	X								L																			
• 74D750006-1001/1002 • 74D750077	X	X																									L		

Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION  L - LOAD  T - TRANSPORT	AERO 58 - Airframe Support Equipment (Aircraft) (Continued)																												
	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
AERO 12C	X	X																											
• AERO 9C	X	X											T	T	T														
• AERO 39	X	X																						T					
• ADU-488	X	X																					T						
MHU-191	X	X																											
• AERO 58	X	X										T							T										15, 16
• AERO 58 • ADU-483	X	X										T																	14, 15, 16
• AERO 58 • AERO 64	X	X																T	T	T					T	T		T	
• AERO 58 • ADU-405	X	X					T																						17
• AERO 58 • ADU-511	X	X	T			T			T																		T		6, 18
• AERO 58 • ADU-801	X	X						T																					19, 20
• AERO 58 • ADU-775	X	X								T																			21
• AERO 58 • AERO 71	X	X											T		T														
• AERO 58 • AERO 91	X	X				T																							22
• AERO 58 • ADU-496 • ADU-433/434	X	X							T																				
ADU-400 • ADU-397	X	X					T L																						1
• ADU-400 • ADU-397 • ADU-496	X	X							T L																				1
• ADU-475	X	X		T													T										T		
• ADU-488	X	X																					T						21

**Table 5-7. Armament Support Equipment (Part II) (Continued)**

X - LOCATION  L - LOAD  T - TRANSPORT	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
MHU-191 (Cont.)	X	X																					T						
• ADU-514	X	X	T	T							T						T										T		23
• MHU-131	X	X														T L													
• 74D750008	X	X					T																						
• 74D750008 • AERO 64A	X	X																		T	T				T				
• 74D750042	X	X																				T						T	
• 74D750008 • 74D750009	X	X	T																										
• AERO 58 • ADU-483	X	X										T																	14, 15, 16
• ADU-474	X	X																											
ARS DOLLY	X	X																				T L							1
AERO DOLLY	X	X					T L											T L	T L	T L							L		1, 24
• AERO 58 • ADV-775/E										T L																			21
MHU-126		X																											
• AERO 58		X								T		T							T										14, 15, 16, 21
• AERO 58 • AERO 64		X																T	T	T					T	T		T	

Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION L - LOAD T - TRANSPORT	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
MHU-126 (Cont.)		X																											
• AERO 58 • AERO 405		X																											
• AERO 58 • AERO 511		X				T			T																	T			6
• AERO 58 • AERO 71		X											T		T														
• AERO 58 • AERO 91		X				T																							24
• AERO 58 • ADU-496 • ADU-433/434		X							T																				
• AERO 58 • ADU-433/434 • ADU-775		X								T																			21
• ADU-514		X	T	T	T						T																		23
• ADU-475 • ADU-433 • ADU-434		X		T													T										T		
• ADU-514 • ADU-433 • ADU-434		X	T														T									T			
• MHU-131		X														T L													
• ADU-488		X																					T						25
• 74D750008 • AERO 64A		X																		T	T				T				
• 74D750042		X																				T						T	
• ADU-406 • AERO 58 • ADU-775		X								T																			21

Table 5-7. Armament Support Equipment (Part II) (Continued)

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	AIQ-167	LGTR	ARQ-56	NOTES
<b>MHU-126 (Cont.)</b>		X																											
• ADU-406 • AERO 58 • ADU-405		X					T																						17
• ADU-406 • AERO 58 • ADU-496		X							T																				
• ADU-406 • ADU-400 • ADU-397		X					T L																						
• ADU-406 • ADU-400 • ADU-397 • ADU-496		X							T L																				
• ADU-406 • AERO 58 • ADU-511		X																								T			6
• AERO 58 • ADU-433/434		X										T																	14, 15, 16
• AERO 58 • ADU-483		X										T																	14, 15, 16
• AERO 58 • ADU-483 • ADU-433/434		X										T																	14, 15, 16
• AERO 58		X								T		T							T										14, 15, 16, 21
• AERO 58 • AERO 64		X																	T	T	T	T			T	T		T	
• AERO 58 • ADU-405		X					T																						17
• AERO 58 • ADU-511		X				T			T																	T			5, 26

Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION																													
L - LOAD																													
T - TRANSPORT	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
MHU-126 (Cont.)		X																											
• AERO 58 • ADU-496		X							T																				
• ADU-475		X		T													T										T		23
• ADU-488		X																					T						25
• ADU-514		X	T		T						T						T										T		
• 74A750042-1001																						T						T	
MHU-202		X																											
• AERO 58		X								T		T																	14, 15, 16, 21
• AERO 58 • AERO 64		X																T	T		T							T	
• AERO 58 • ADU-511		X							T																				5
• AERO 58 • AERO 71		X											T		T														
• AERO 58 • AERO 91 • ADU-433/434		X				T																							22
• AERO 58 • ADU-496 • ADU-433/434		X							T																				
• AERO 58 • ADU-433/434 • ADU-511		X	T			T			T																				



Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION L - LOAD T - TRANSPORT																	
	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG
MHU-202 (Cont.)		X															
• AERO 58 • ADU-433/434 • ADU-405		X					T										17
• AERO 58 • ADU-801								T									
• ADU-475 • ADU-433/434		X		T										T			
• ADU-488		X															25
• ADU-514		X	T	T	T						T						23
• MHU-131		X														T L	
• 74D750008		X					T									T	
• 74D750042		X															T
• AERO 58 • ADU-433/434 • ADU-483																T	
• AERO 58 • ADU-483		X										T					14, 15, 16
• AERO 58 • ADU-433/434		X										T				T	
• AERO 58 • ADU-802												T					
• ADU-514 • ADU-433/434		X			T												
• AERO 58 • ADU-800/814												T					14, 15
	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG
																	ASQ-173
																	AWW-13
																	CNU-188
																	FPU-6
																	FPU-8
																	WING/FIN/FUZE
																	NIT BOTTLES
																	FLIR
																	ALQ-167
																	LGTR
																	ARQ-56
																	NOTES

Table 5-7. Armament Support Equipment (Part II) (Continued)

<b>X - LOCATION</b>  <b>L - LOAD</b>  <b>T - TRANSPORT</b>	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
AERO 51/AM-32 K-4		X				T							T		T														22, 27
• CHOCKS		X	T	T			T	T									T										T		
• MHU-61		X		T	T												T										T		
• MHU-63		X				T													T										
• MHU-63 • ADU-358 • ADU-359		X	T																										
• MHU-65		X																		T									
• MHU-125 • AERO 58		X								T		T							T										15, 16, 21
• MHU-125 • AERO 58 • AERO 64		X																	T	T	T	T			T	T			
• MHU-125 • AERO 58 • ADU-405		X						T																				T	
• MHU-125 • AERO 58 • ADU-511		X				T			T																		T		6, 26
• MHU-125 • AERO 58 • ADU-496		X							T																				
• MHU-125 • ADU-475		X		T													T										T		
• MHU-125 • ADU-514		X	T	T	T						T						T										T		
• MHU-125 • ADU-488		X																					T						25
• MHU-63 • ADU-359		X									T																		
• MHU-125 • 74D750042		X						T																				T	

Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION L - LOAD T - TRANSPORT	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
MHU-151/MHU-185		X				T							T		T														22, 27
• MHU-61		X		T	T												T										T		
• MHU-63		X				T													T										
• MHU-63 • ADU-358 • ADU-359		X	T																										
• MHU-65		X																		T									
• MHU-125 • AERO 58		X								T		T							T										15, 16, 21
• MHU-125 • AERO 58 • AERO 64		X																	T	T	T	T			T	T		T	
• MHU-125 • AERO 58 • ADU-405		X					T																						17
• MHU-125 • AERO 58 • ADU-511		X				T		T																		T			6, 26
• MHU-125 • AERO 58 • ADU-496		X							T																				
• MHU-125 • ADU-475		X		T													T											T	
• MHU-125 • ADU-514		X	T	T	T						T						T										T		
• MHU-125 • ADU-488		X																					T						25
• 74D750018		X																			T								
• MHU-63 • ADU-359											T																		
• MHU-125 • 74D750042																													

Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION  L - LOAD  T - TRANSPORT	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
MK 7 MODS		X																											1
• AERO 87 • AERO 58		X																		T L									1
• AERO 87 • AERO 58 • ADU-405		X				T L																							1, 17
• AERO 87 • AERO 58 • AERO 64		X																							T L				1
• AERO 87 • AERO 58 • ADU-511		X																							T L				1, 6
AS 32 K-1		X																											1
• MHU-61		X		T	T												T										T		
• MHU-63		X				T L													T L										1
• MHU-63 • ADU-358 • ADU-359		X	T L																										1
• MHU-65		X																		T L									1
• MHU-125 • AERO 58		X								T L		T								T L									1, 15, 16, 21
• MHU-125 • AERO 58 • AERO 64		X																	T L	T L	T L	T L			T L	T L		T L	1
• MHU-125 • AERO 58 • ADU-405		X					T L																						1, 17
• MHU-125 • AERO 58 • ADU-511		X				T L			T L																	T L			1, 6, 27

Table 5-7. Armament Support Equipment (Part II) (Continued)

X - LOCATION L - LOAD T - TRANSPORT	SHIPBOARD	SHOREBASE	AIM-7	AIM-9	AIM-9X	AGM-65	AGM-84D/E	AGM-84H/K	AGM-88	AGM-154	AIM-120	TALD/ITALD	MK 76/106 BDU-33/48	LUU-2/19 MK 58	ALE-29/ALE-47	20 MM AMMO	INSTR PKG	ASQ-173	AWW-13	CNU-188	FPU-6	FPU-8	WING/FIN/FUZE	NIT BOTTLES	FLIR	ALQ-167	LGTR	ARQ-56	NOTES
AS 32 K-1 (Cont.)		X																											
• MHU-125 • AERO 58 • ADU-496		X							T L																				1
• MHU-125 • ADU-475		X		T													T										T		
• MHU-125 • ADU-514		X	T	T	T						T						T										T		
• MHU-125 • ADU-488		X																					T						25
• FORK ROLLERS		X																											1
• MHU-188/E		X				T L				T L																			1, 28
• MHU-63 • ADU-359											T L																		
• 74A750017-1001/1003			L																										
• MHU-125 • 74A750042-1001																						T L						T L	
• 74A750018-1001																					T L								

**NOTES FOR TABLE 5-7**

1. Do not use excessive force when seating/latching lugs in the suspension hooks.
2. Combination is used in conjunction with weapon loading hoist adapters (74D750006-1001 and 74D750006-1002).
3. HLK-275A is used with GBU-24, and HLK-276A is used with GBU-31(V)2B. Combination not used for GBU-31(V)4B. GBU-24 use one 74D750004 and one ADU-764 (ADU-764A/E, hole A). GBU-31(V)2B use two 74D750004 SST.
4. Combination is used for GBU-31(V)4B only.
5. Authorized for transporting the specified single weapon in the three weapon configuration only.
6. Caution must be exercised when loading/downloading single weapon to or from all multiple weapons adapters to ensure an unbalanced situation does not occur.
7. (LAU-10/SUU-25) ADU-405 may be used in lieu of ADU-433/434 for single weapon only.
8. GBU-24 requires the use of ADU-405 and ADU-433/434 adapters.
9. Applicable to the Aero 51 trailer only.
10. Authorized for transporting specified single weapons.
11. Fuel tanks must be inspected to ensure they are empty prior to downloading.
12. Used for loading a preloaded LAU-118 launcher.
13. AGM-84H/K uses single stores trolleys (74D750004-1001) and pin directly to weapon lifting lugs.
14. Requires the use of TALD Jacket Adapters.  
  
Single TALD: Center jacket adapter in Aero 58A with TALD nose forward.  
  
Triple TALD: Center lower TALD Jacket Adapter in Aero 58A with TALD nose forward, position upper TALD Jack Adapter in Aero 483/E with CG 5 inches forward (TALD nose aft) and GC 5 inches aft (TALD nose forward) Aero 58A: Use roller Hole 2 and 3 for offset.
15. (TALD) Two ADU-800/E Cradle Adapters (PN 665AS900) must be used for each TALD to be transported.
16. (ITALD) One ADU-800/E Cradle Adapter for aft end must be used to transport each ITALD.
17. Install ADU-405 roller height adapters with locking pins inboard.
18. Only single weapon is authorized with ADU-511 adapter.
19. Position sliding chock on forward ADU-801/E Transport Adapter in forward most position. Position sliding chock on aft ADU-801/E Transport Adapters in aft most position.

20. Position weapon on skid/trailer such that the adapter chocks the weapon 24 inches forward of forward lug (just in front of wing root).

21. (AGM-154) Requires the use of ADU-775/E JSOW adapters vise Aero 58A rollers.

22. This combination is used for transporting the AGM-65 for containerized loading.

23. ADU-567 wing/fin guard required for handling/transporting AIM-9L/M Sidewinder during shipboard operations.

24. Load conducted with the applicable skid/adaptor/weapon combination secured in the tray.

25. ADU-628 required for transporting AIM-120 wings and fins.

26. AGM-65: Single missile only. Use inboard chock position.

27. Trailer configured as a flatbed.

28. Authorized for transporting/loading containerized Mavericks.





**SECTION VI**  
**BOMBS RETARD/NONRETARD**

**6-1. INTRODUCTION.**

6-2. This section contains loading and unloading information for the retard/nonretard bombs listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

Mk 82/BLU-111 LD/HD  
Mk 83/BLU-110 LD/HD  
Mk 84 LD/BLU-117  
BDU-45/B LD/HD

**6-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

6-4. ASE authorized for loading retard/nonretard bombs is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

6-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

**6-6. AIRCRAFT PREPARATION/INSPECTION.**

6-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, if applicable Paragraph 5-11, and as follows:

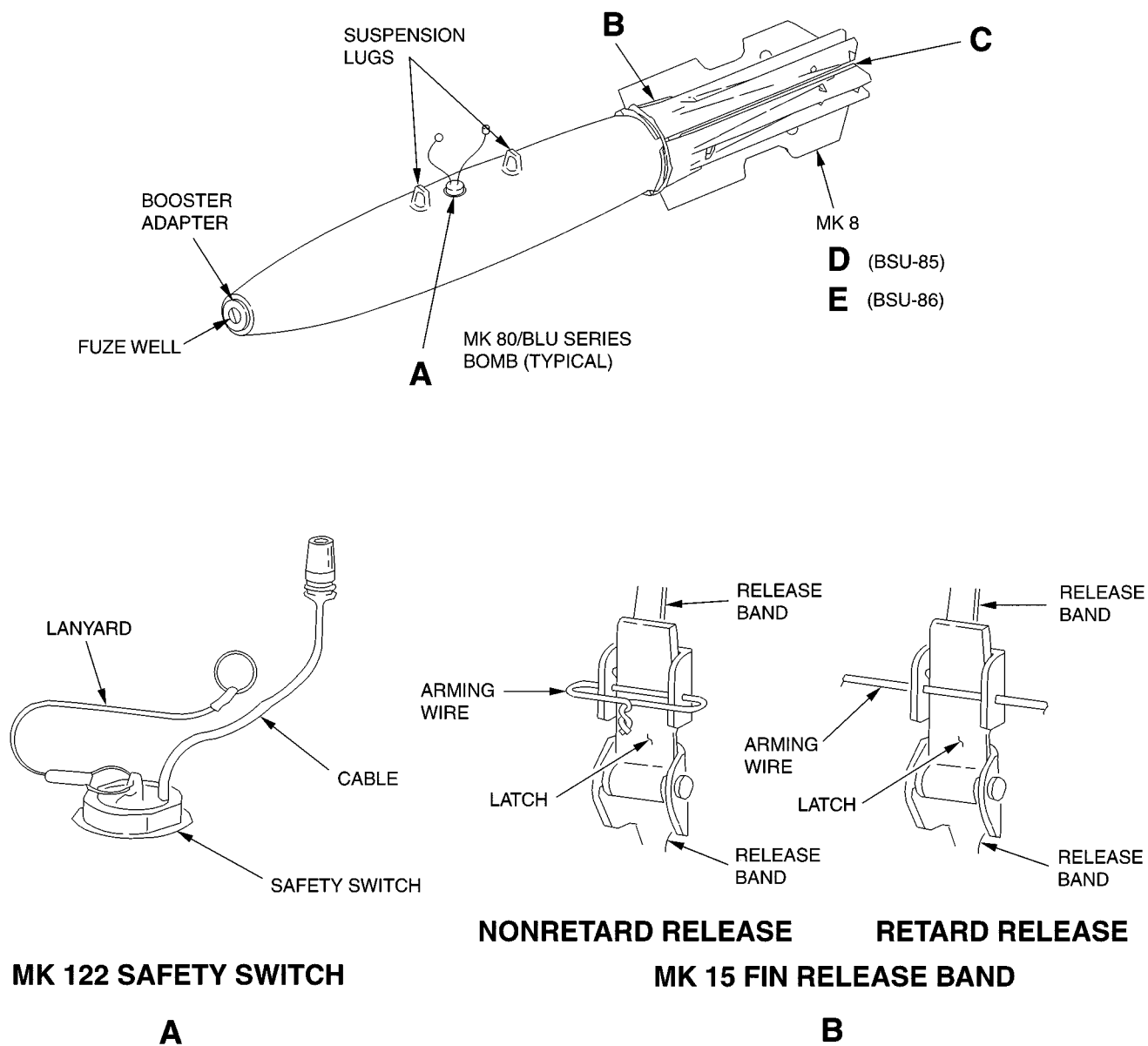
1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. (As applicable) Verify BRU-32 swaybraces are properly seated against BRU-33.
4. (As applicable) Verify adapter cable installed (Figures 3-5 and 3-6).

**6-8. WEAPON INSPECTION.**

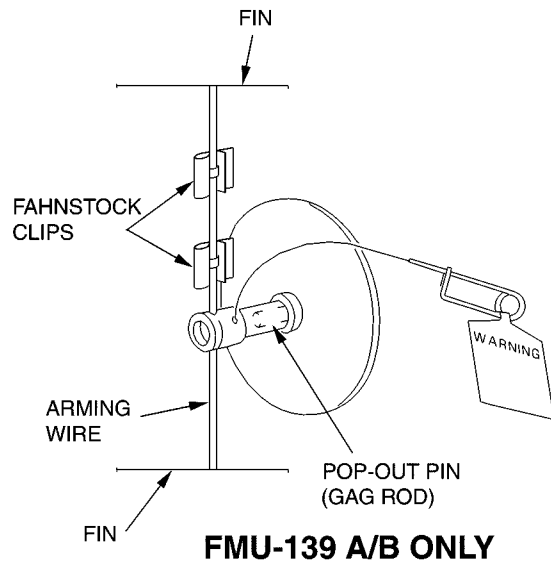
6-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows (Figures 6-1 and 6-2):

1. Ensure weapons are properly assembled and not damaged.

**A1-F18AE-LWS-000**  
**Bombs Retard/Nonretard**

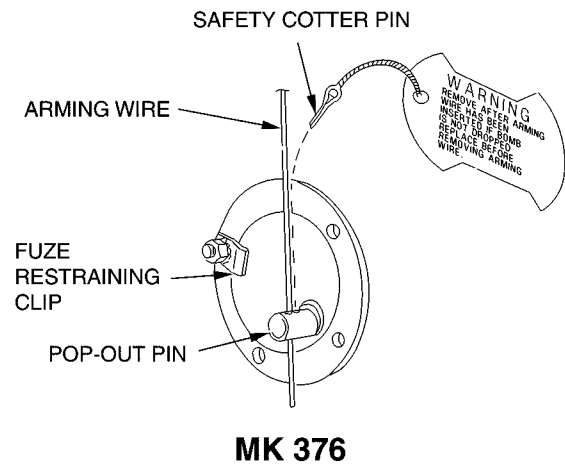


**Figure 6-1. Mk 80/BLU Series Bomb Inspection (Sheet 1 of 3)**



### NOTES

1. FMU-139/B AND FMU-139B/B DOES NOT REQUIRE MK 3 ARMING WIRE.
2. FAHNSTOCK CLIPS MUST BE INSTALLED BUT MAY NOT BE EXACTLY IN POSITION SHOWN.



### NOTE

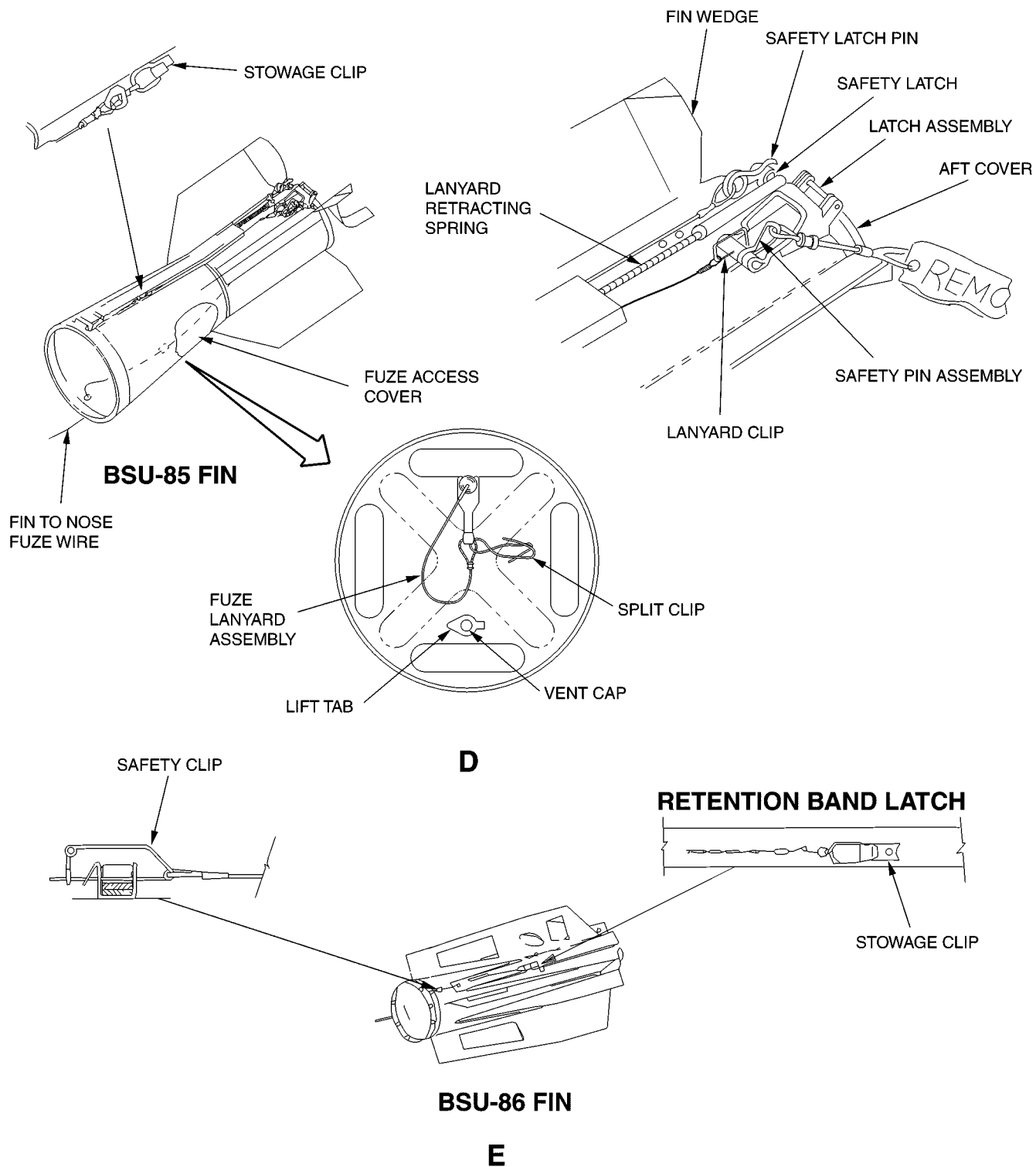
MK 376 IS USED WITH INERT MK 80 SERIES AND BDU-45 PRACTICE BOMBS ONLY. FUZE RESTRAINING CLIP MUST BE INSTALLED BUT MAY NOT BE EXACTLY IN POSITION SHOWN.

## ELECTRIC TAIL FUZES

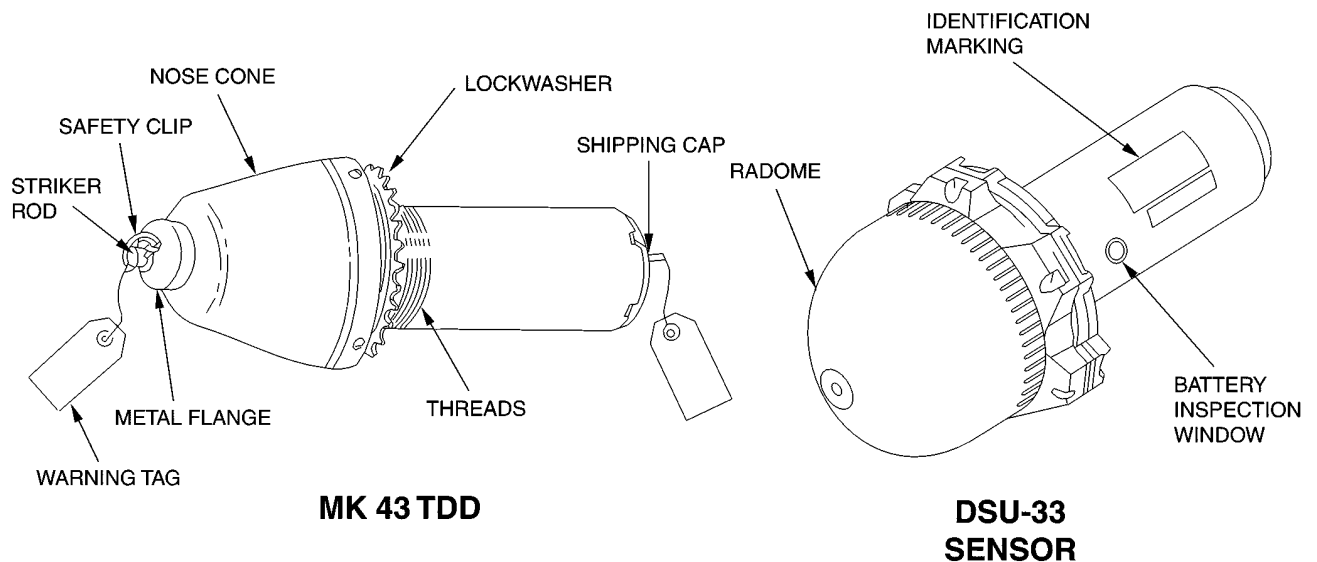
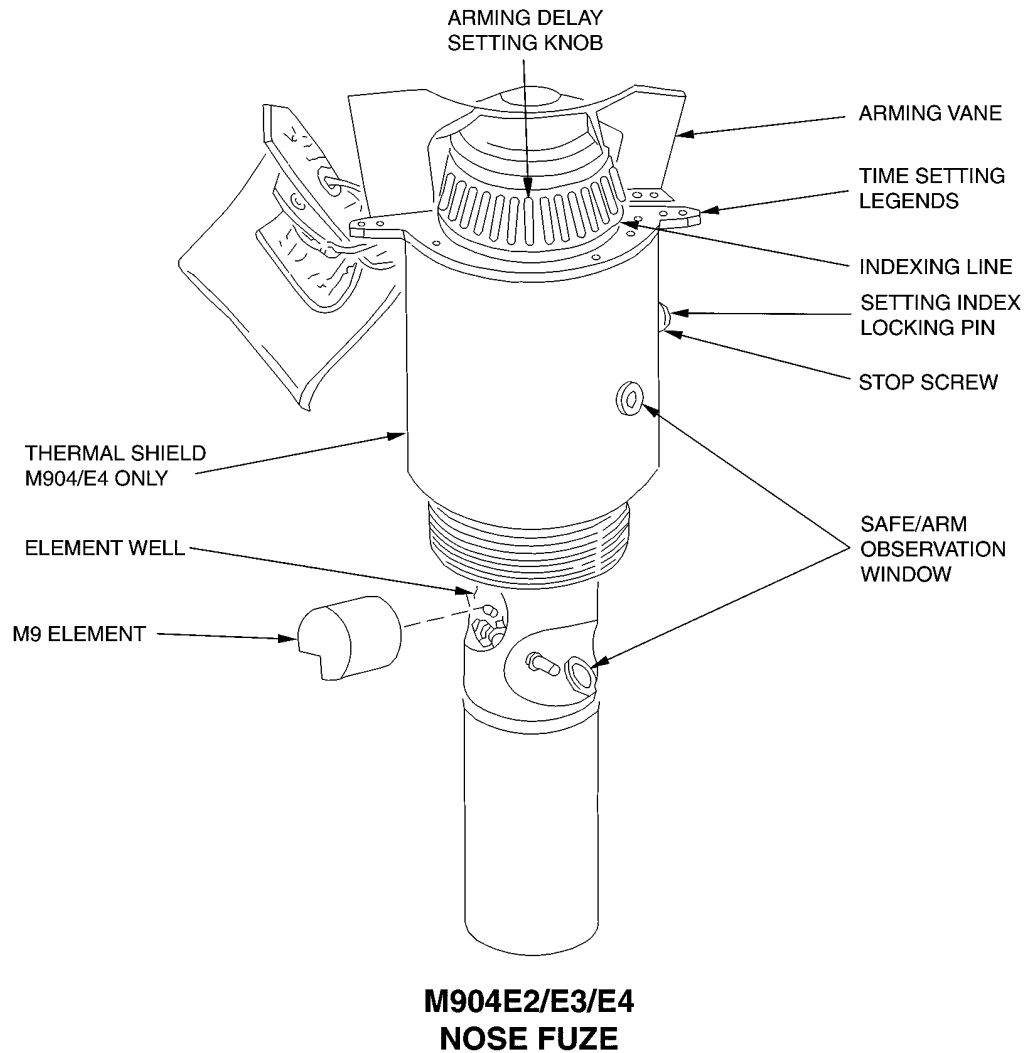
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**Figure 6-1. Mk 80/BLU Series Bomb Inspection (Sheet 2)**

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**Bombs Retard/Nonretard**



**Figure 6-1. Mk 80/BLU Series Bomb Inspection (Sheet 3)**



**Figure 6-2. M904 Series Nose Fuze, Mk 43 Target Detecting and DSU-33 Sensor Device (TDD) Inspection**

**NOTE**

Lugs are correctly adjusted when bottom of each lug eye is positioned flush with weapon surface (thermal or nonthermal protected).

2. Verify suspension lugs are installed. Inspect for adjustment and alignment.

**NOTE**

(BDU-45/B) Spotting charges not required for night use.

3. (BDU-45/B, if applicable) Spotting charges installed.
4. (If applicable) Mk 89 Adapter:
  - a. Arming wire routed thru pop-out pin.
  - b. Cotter pin is removed.
5. Inspect tail fins for alignment, security of installation and for the following (as applicable):
  - a. (Conical Fin/BSU-33) Fuze access door secured.
    - (1) (BSU-33) Fully seated 360° against bomb body.
  - b. (Mk 15 Fin) Ensure fin release wire with positive arming adapter is installed and safety (cotter) pin is removed. For nonretard release, cut fin release arming wire on each side of band latch and twist ends together. Remove remaining length of arming wire and adapter.
  - c. (BSU-86 Fin) Ensure fin release lanyard swivel is installed in stowage clip, safety clip is installed in release band latch and safety (cotter) pin is removed.
  - d. BSU-85 Fin:
    - (1) Ensure fin safety latch pin installed in safety latch.
    - (2) Release lanyard safety clip installed.
    - (3) Band/latch not damaged.
    - (4) Safing pin assembly removed.
    - (5) Release lanyard swivel installed in stowage clip.
    - (6) Verify vent cap open.
6. If mechanical fuze is to be installed, ensure adapter booster is installed and fuze cavity is free of foreign matter and not damaged.
7. Bombs with Mk 376 or FMU-139 Series Electric Fuzes installed.

**NOTE**

If Mk 122 Cable is damaged, or safety switch lanyard has been pulled, the entire Mk 122 Assembly must be replaced.

- a. Ensure Mk 122 Safety Switch is installed in charging receptacle.

**WARNING**

The Mk 376 Electric Tail Fuze is restricted to training use only with inert Mk 80 Series and BDU-45 Practice Bombs.

**NOTE**

If Mk 3 arming wire is pulled from Mk 376/FMU-139 Fuze during loading, the arming wire may be reinstalled provided red and black striping is not visible.

- b. Ensure Mk 3 arming wire is connected as follows:

**WARNING**

(FMU-139) If the pop-out pin (gag rod) has extended and red and black striping is visible, the fuze is to be considered armed/unsafe. Do not attempt to reset (push back) the pop-out pin (gag rod). Notify proper authority.

**NOTE**

The FMU-139B/B and FMU-152 Electric Tail Fuzes do not require an arming wire.

Only the FMU-139 electric tail fuzes that use arming wire will require 2 Fahnestock clips positioned above pop-out pin (gag rod).

(1) (If applicable) Arming wire attached to aft bomb lug routed aft through MAU-182 and down through top hole in fin, through two Fahnestock clips (FMU-139), through pop-out pin of fuze, and extends approximately 6 inches below the fin.

- c. Verify safety (cotter) pin and warning tags are removed from fuze pop-out pins.
- d. (Mk 376) Ensure decal or other appropriate marking is affixed to bomb fin to indicate type of fuze installed. Fahnestock clips not installed.
- e. (FMU-139 Series) Ensure fuze arm delay data is marked on weapon.
- f. (Mk 376) Verify fuze restraining clips installed.

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8. Mechanical Fuzes. Inspect fuzes as outlined in the following procedures. Refer to Paragraph 5-42 for general fuze safety information.

**WARNING**

Do not attempt to disarm a partially or fully armed fuze by rotating arming vane. Notify proper authority if partially or fully armed condition is indicated.

a. (If applicable) M904E2:

(1) Verify safety wire is installed thorough the arming vane and arming wire guide.

**WARNING**

Full red in upper or lower window (with black letter A on red in the lower window of some fuzes) indicates a fully armed fuze. Notify proper authority when an armed or partially armed condition is noted.

**NOTE**

In some fuzes a thin red band may be visible at the bottom of the upper window in the safe condition.

(2) Ensure upper window does not show red or red with black letter A on some fuzes

**WARNING**

If a white stripe is not visible in upper window when the arming delay is set on 6 or 18, or if a white stripe appears in upper window when the arming delay is not set on 6 or 18, the fuze is partially armed. If the arming delay setting cannot be changed, the fuze is to be considered armed. Discontinue inspection and notify proper authority.

**NOTE**

Each fuze must be inspected at the 6 and 18 second setting when removed from its individual container; subsequent inspections may be made at either the 6 or 18 seconds setting.

(3) Set arming delay to 6 and 18 seconds. Ensure white stripe appears in upper window, lower window must remain vacant or dark in color.

(4) Verify desired delay element is installed and element is fully seated and locked.

**CAUTION**

Do not reinstall the stop screw if the delay is set at the 2 or 4 second setting or a dud may result.



**NOTE**

Arming delay may be set before or after fuze is installed in the bomb. The stop screw must be removed to obtain the 2 or 4 second delay setting. Retain stop screw.

(5) (If applicable) Set arming delay. Ensure arming delay setting knob is locked at desired setting when index locking pin is released.

(6) Verify fuze exterior, arming vane and threads not damaged.

b. (If applicable) M904E3/E4:

(1) Verify safety wire is installed through the arming wire guide.

**WARNING**

Black letter A against red background in upper or lower window indicates a fully armed fuze. Notify proper authority when an armed or partially armed condition is indicated.

(2) Ensure upper and lower windows do not show red with black letter A.

**WARNING**

If green background without 6 or 18 appears in upper window when arming delay is set on 6 or 18, or if the number in the upper window does not match the arming delay setting number, the fuze is partially armed. If arming delay setting cannot be changed, fuze is to be considered armed. Discontinue inspection and notify proper authority.

**NOTE**

Each fuze must be inspected at the 6 and 18 second setting when removed from its individual container; subsequent inspection may be made at either the 6 or 18 second setting.

(3) Set arming delay to 6 and 18 seconds. Ensure green background with white number 6 or 18, depending on arming delay setting, appears in upper window. Lower window must remain vacant or dark.

(4) Verify desired delay element is fully seated and locked.

**CAUTION**

Do not reinstall the stop screw if the delay is set at the 2 or 4 second setting or a dud may result.

**NOTE**

Arming delay may be set before or after fuze is installed in the bomb. The stop screw must be removed to obtain the 2 or 4 second delay setting. Retain stop screw.

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**Bombs Retard/Nonretard**

(5) (If applicable) Set arming delay. Ensure arming delay setting knob is locked at desired setting when index locking pin is released.

(6) Verify fuze exterior, arming vane and threads not damaged.

c. M9 Delay Element. If no delay element is installed, proceed as follows:

**WARNING**

The delay element is a percussion device. Do not drop. Handle with extreme care.

(1) Verify delay element well is clean and not damaged.

(2) Verify desired delay element is being used (delay time is printed on outer end of element). Ensure delay element is clean and not damaged.

(3) Press delay element locking pin.

(4) Align keyway in delay element with small pin in delay element well.

(5) Insert delay element into delay well.

(6) Release delay element locking pin and ensure that element is fully seated and locked.

9. (If applicable) Mk 43 Target Detecting Device (TDD). Inspect TDD as outlined in the following procedures:

**CAUTION**

If Mk 43 TDD is accidentally initiated during handling, it will become warm to the touch until the battery is exhausted. Units can be initiated by withdrawal of the safety clip. Should this occur, the unit is no longer operable and must be rejected.

a. Verify safety clip installed in striker rod.

b. Verify nose cone, other external surfaces, and threads are clean and not damaged, and lockwasher is in place at top of threads.

c. Remove shipping cap from base. Ensure O-ring seal under the shipping cap is removed with the cap. Retain for possible future use.

d. Fully press the electrical connector in base of unit. If connector does not return to the fully extended position when released, discard the unit. Ensure that connector is clean and not damaged.

10. (If applicable) Inspect DSU-33 as follows:

**CAUTION**

The battery paint band, when viewed through the inspection window, will appear a light color (e.g., white or light gray) if battery has not been activated. The paint band will appear a dark color (e.g., black or dark gray) if activation has occurred.

- a. Ensure battery paint band is not dark (Figure 6-2).

**NOTE**

Minor damage to sensor body caused by bomb nose set screw is acceptable.

- b. Ensure radome and other external surfaces are clean and not damaged.

**6-10. WEAPON LOADING.**

**6-11. BRU-32/BRU-33 RACK PREPARATION.** Prepare BRU-32/BRU-33 as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 6-6) and Weapon Inspection (Paragraph 6-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (Electric fuzing) Ensure PP-6419 power supply 115 VAC circuit breaker is ON.
5. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
6. Position handling/loading equipment with weapon under station to be loaded and secure.
7. (If applicable) Bomb hoist loading (Paragraph 5-33):
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.
  - d. Remove weapon tiedown straps securing weapon to handling equipment.
8. (If applicable) Manual hoisting bar loading:

**CAUTION**

Extreme care must be exercised when installing manual hoisting bar to prevent cross threading of bar in bomb fuze well.

**NOTE**

HLU-256/E hoisting bars may be used to load bombs up to and including 1,000 pounds.

- a. Install manual hoisting bar in fuze well and tail (Figure 6-3).
- b. Remove weapon tiedown straps securing weapon to handling equipment.

**NOTE**

Landing gear doors must be manually retracted when loading centerline station.

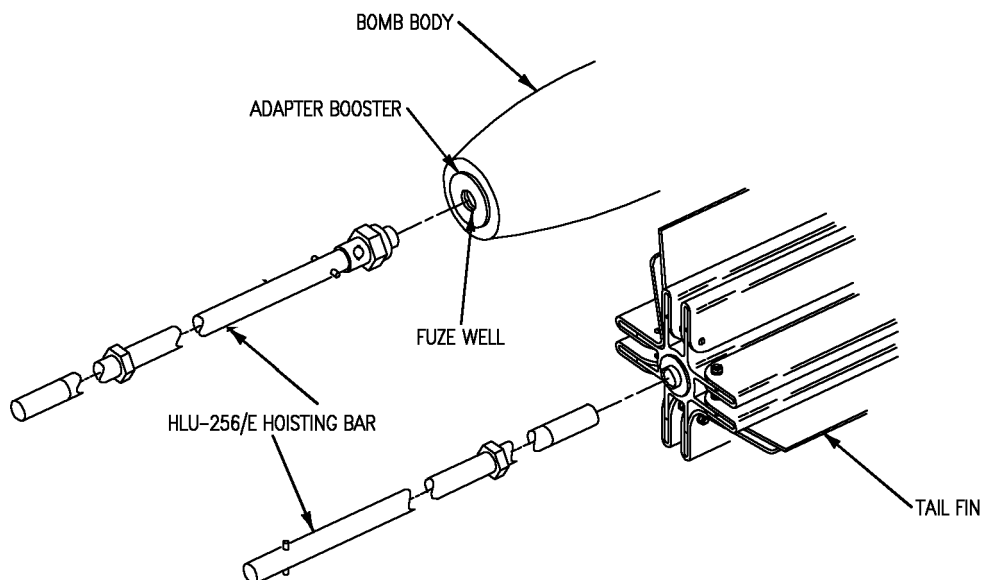
9. (If applicable) Retract landing gear doors and hold in position (Paragraph 5-19).
  10. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).
- 6-12. **BRU-32/BRU-33 LOADING.** Load BRU-32/BRU-33 as follows:

**CAUTION**

Use extreme care during loading to prevent damage to pylon fuel receptacle valve.

**NOTE**

If Mk 122 arming safety switch lanyard is pulled during loading, the entire Mk 122 Assembly must be replaced.



**Figure 6-3. HLU-256/E Hoisting Bar Installation**

1. (If applicable) Bomb truck/weapon loader loading:

**NOTE**

(Electric Fuze) Swivel loop of Mk 3 Arming Wire must be positioned on the same side of bomb suspension lug as the positive arming latch of the bomb rack being loaded.

- a. Raise weapon within 2 inches of bomb rack.

**NOTE**

(Mk 82/BLU-111/BRU-33) Install positive arming adapter on right forward swaybrace before engaging lugs in suspension hooks.

- b. (BRU-33) Connect arming adapter to right forward swaybrace.

**NOTE**

Verify arming wires are positioned between bomb lug and swaybrace pads before suspension hooks close.

- c. Continue raising weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- d. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-17, as applicable).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- e. Lower bomb truck/weapon loader until weapon weight is supported by bomb rack suspension hooks.
- f. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
- g. Rotate ground safety handle to the LOCKED position.
- h. Remove weapon tiedown straps.

**CAUTION**

Use extreme care during loading to prevent damage to pylon fuel receptacle valve.

**NOTE**

If Mk 122 arming safety switch lanyard is pulled during loading, the entire Mk 122 assembly must be replaced.

2. (If applicable) Bomb hoist loading:

**CAUTION**

Do not use excessive force when seating/latching lugs in suspension hooks.

**NOTE**

(Electric fuze) Swivel loop of Mk 3 arming wire must be positioned on the same side of bomb suspension lug as the positive arming latch of the bomb rack being loaded.

- a. Hoist weapon within 2 inches of bomb rack.

**NOTE**

(Mk 82/BLU-111/BRU-33) Install positive arming adapter on right forward swaybrace before engaging lugs in suspension hooks.

- b. (BRU-33) Connect arming adapter to right forward swaybrace.

**NOTE**

Verify arming wires are positioned between bomb lug and swaybrace pads before suspension hooks close.

- c. Continue raising weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- d. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-17, as applicable).
- e. Ease hoist until weapon weight is supported by bomb rack suspension hooks.
- f. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
- g. Rotate ground safety handle to the LOCKED position.

**CAUTION**

Use extreme care during loading to prevent damage to pylon fuel receptacle valve.

**NOTE**

If Mk 122 arming safety switch lanyard is pulled during loading, the entire Mk 122 assembly must be replaced.

3. (If applicable) Manual hoisting bar loading:

**NOTE**

(Electric fuze) Swivel loop of Mk 3 Arming Wire must be positioned on the same side of bomb suspension lug as the positive arming latch of the bomb rack being loaded.

- a. Raise weapon within 2 inches of bomb rack.

**NOTE**

(Mk 82/BLU-111/BRU-33) Install positive arming adapter on right forward swaybrace before engaging lugs in suspension hooks.

- b. (BRU-33) Connect arming adapter to right forward swaybrace.

**NOTE**

Verify arming wires are positioned between bomb lug and swaybrace pads before suspension hooks close.

- c. Continue raising bomb until both suspension lugs enter bomb rack suspension hooks and hooks latch.

**WARNING**

Maintain lifting pressure on weapon until it has been verified that the weapon is supported by suspension hooks.

- d. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-13, as applicable).
  - e. Ease lifting pressure sufficiently to verify that the weapon is supported by bomb rack suspension hooks.
  - f. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - g. Rotate ground safety handle to the LOCKED position.
4. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.
  5. (If applicable) Return landing gear doors to normal position.

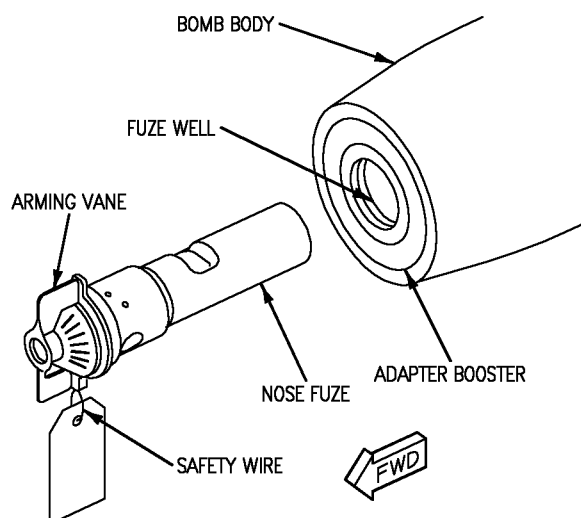
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6. (Electric fuze) Electrically connect Mk 122 Cable (Paragraph 5-30).
7. (Electric fuze) Attach Mk 122 arming safety switch lanyard to positive arming latch (Paragraph 5-30).
8. Fuze installation. Install fuzes (Figure 6-4) as outlined in the following procedures (refer to Paragraph 5-42 for general fuze safety information).
  - a. M904E2/E3/E4:
    - (1) Ensure that nose adapter booster is installed in bomb and adapter booster threads are clean and not damaged (Figure 6-4).
    - (2) Verify that correct delay element is fully seated and locked.
    - (3) Screw fuze into adapter booster handtight.
  - b. Mk 43 TDD:

**CAUTION**

Do not remove safety clip from striker rod. Removal of safety clip will permit striker rod to retract and initiate the thermal battery. If this occurs, the Mk 43 TDD will be a dud.

- (1) Ensure bomb nose well is clean and setscrew retracted.



**Figure 6-4. Nose Fuze Installation**



(2) Insert unit into nose well and turn clockwise until handtight; using spanner wrench, tighten one quarter turn and tighten setscrew.

c. DSU-33:

(1) Ensure bomb nose well is clean and set screw retracted.

**NOTE**

Sensor may not fit flush with fuze well. Approximately 1/4-in. gap between sensor and bomb nose is acceptable.

(2) Screw sensor into nose fuze well hand tight.

(3) Tighten nose set screw:

(a) (Preferred) Torque set screw to 30-35 in-lbs.

(b) (Alternate) Tighten 1/2 to one turn after contact with sensor.

**WARNING**

Unless directed otherwise, fin to fuze arming wire must be installed when using M904 mechanical nose fuze/electric tail fuze with retard/pilot option configuration.

**NOTE**

(BSU-85/BSU-86) For nonretard release, do not connect fin release lanyard. Swivel remains in stowage clip.

Electric fuze arming wires apply to the FMU-139A/B/Mk 376 Electric Fuze and Mk 89 Adapter.

9. Install/connect arming wires/lanyards to aircraft (Figures 6-5 through 6-14). Refer to Paragraph 5-27 for general arming wire information.

10. (As required) Perform Weapon Inventory/BIT Check (Paragraph 5-39).

11. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).

12. Place WEAPON LOADED sign in cockpit.

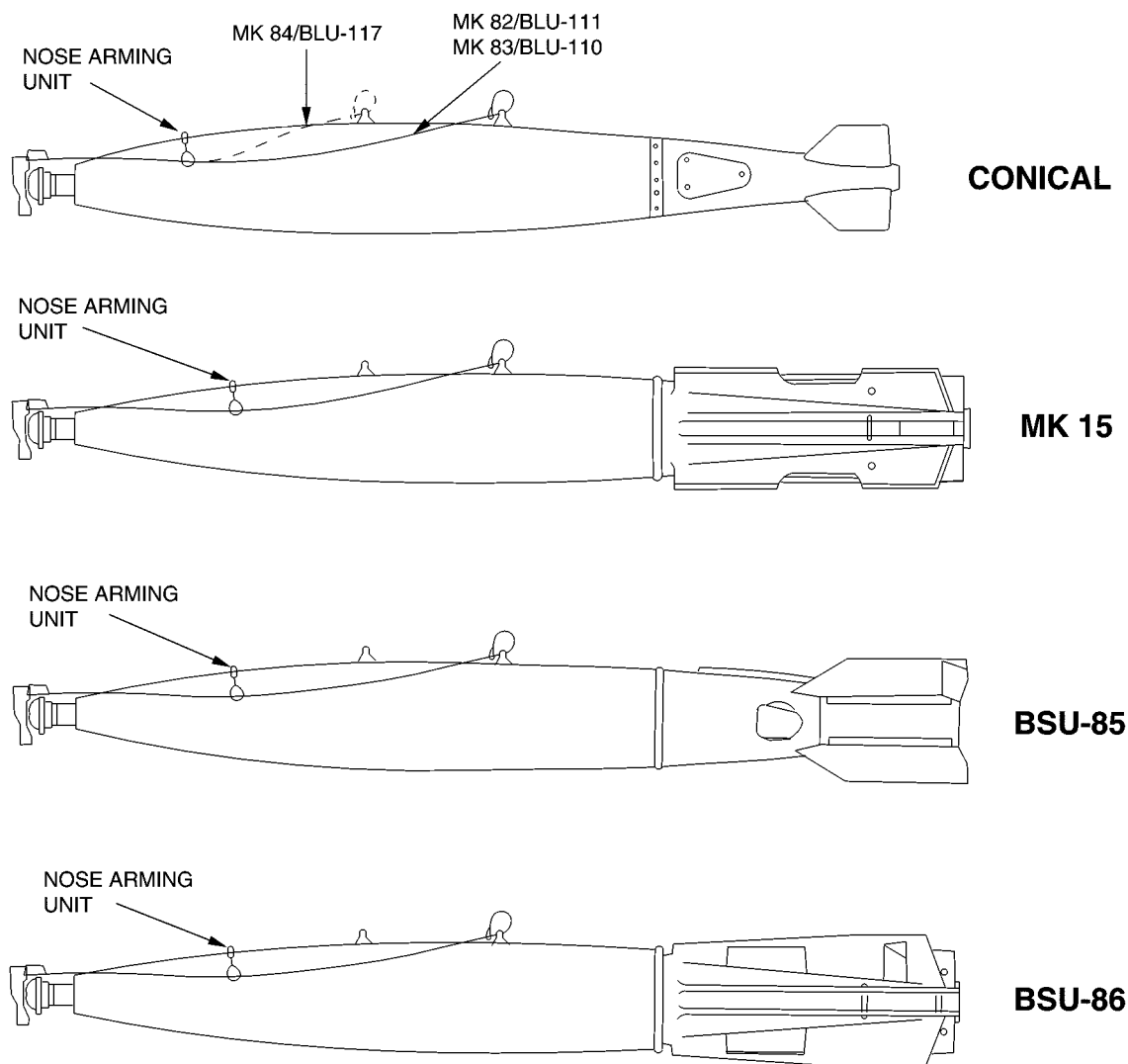
13. Remove tools and handling/loading equipment from area.

**6-13. POSTLOADING INSPECTION.**

6-14. Perform Postloading Inspection for weapons loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.

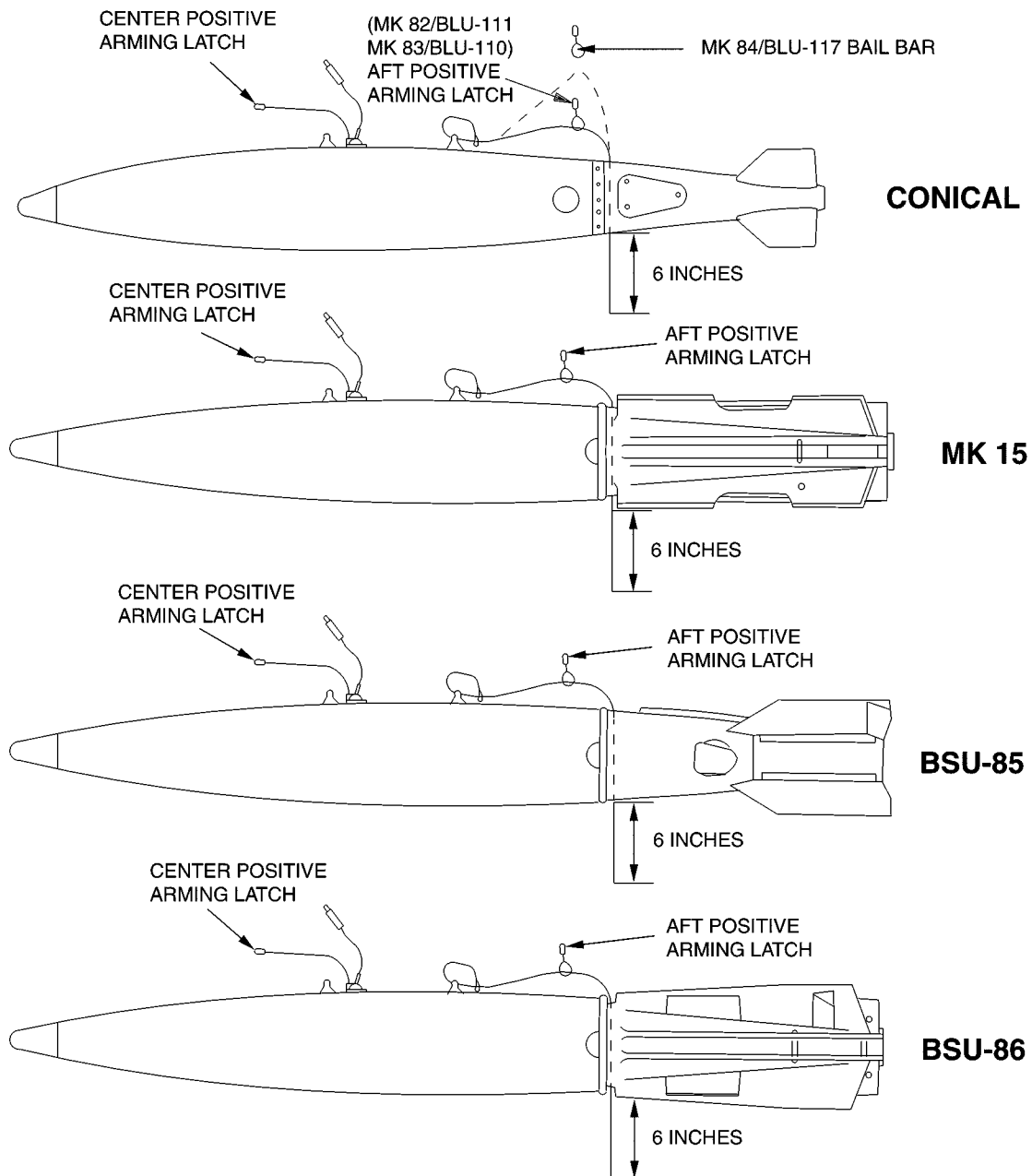
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**Bombs Retard/Nonretard**



RECOMMENDED ARMING WIRE		
MK 80 SERIES	NOSE FUZE	COMPOSITE

ARMING WIRE ROUTING	
NOSE FUZE	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO NOSE ARMING UNIT.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD (FWD LUG FOR MK 84).</li> <li>3. PASS WIRE THRU MAU-182 RING.</li> <li>4. INSTALL SAFETY CLIP THRU ARMING VANE AND SECURE.</li> </ol>
FUZE SAFETY PIN/SAFETY WIRE	<ol style="list-style-type: none"> <li>1. REMOVE AFTER ARMING WIRE INSTALLATION.</li> </ol>

**Figure 6-5. Mk 80/BLU Series and BDU-45/B Nonretard, Mechanical Nose Fuze**

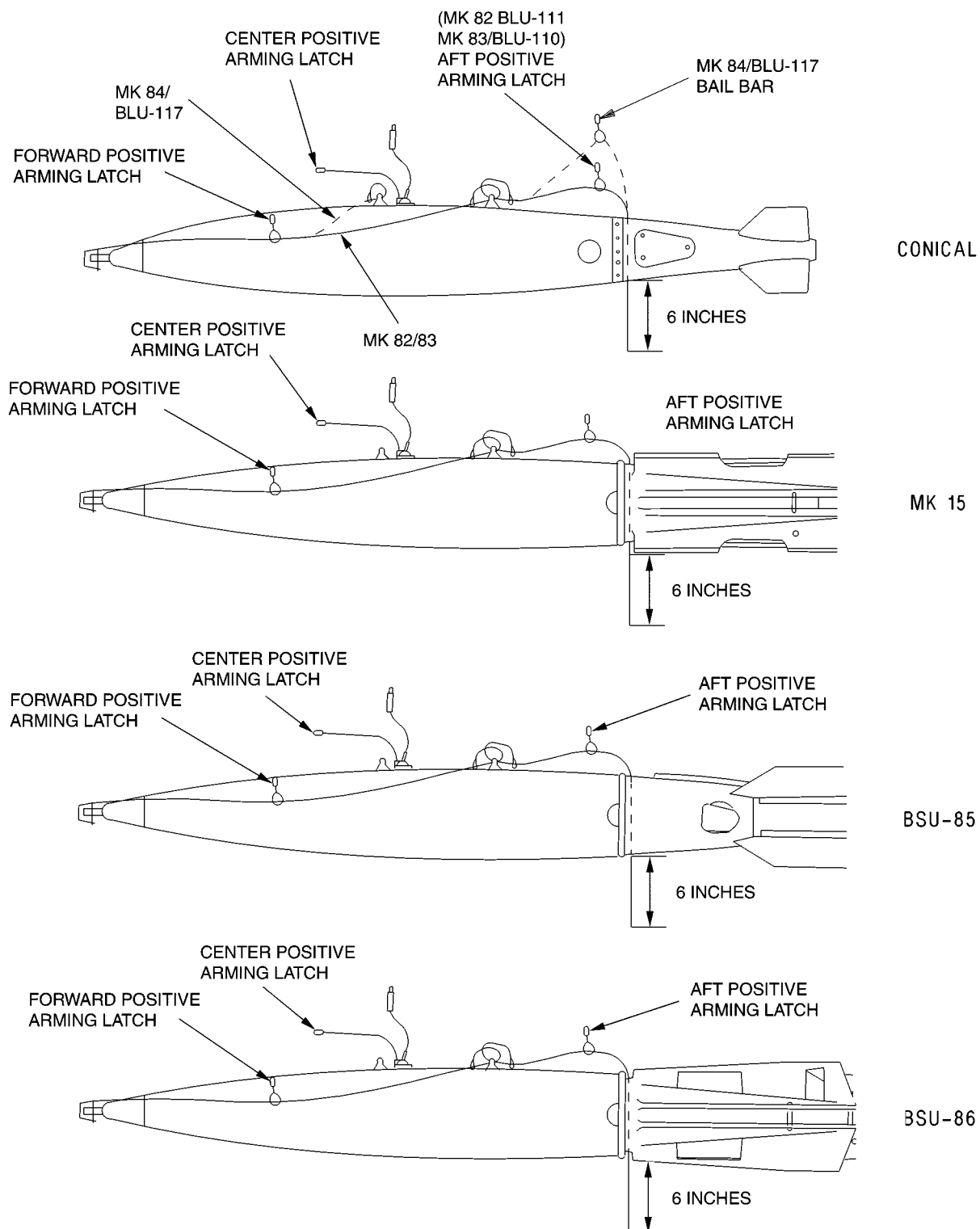


RECOMMENDED ARMING WIRE		
BDU-45/B/INERT MK 80 SERIES	FMU-139A/B/MK 376 TAIL FUZE/MK 89 ADAPTER	MK 3

ARMING WIRE ROUTING	
MK 376 TAIL FUZE/ MK 89 ADAPTER/ FMU-139A/B	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO AFT LUG USING PRIMARY METHOD.</li> <li>2. (MK 84) MK 84/BLU-117 POSITIVE ARM BY ATTACHING MAU-182 TO BAIL BAR.</li> <li>3. (MK 82/BLU-111/MK 83/BLU-110) POSITIVE ARMING BY ATTACHING MAU-182 TO AFT POSITIVE ARMING LATCH.</li> <li>4. CUT FUZE ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>

**Figure 6-6. Mk 80/BLU Series and BDU-45/B Nonretard, Electric Tail Fuze**

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**Figure 6-7. Mk 80/BLU Series and BDU-45/B Nonretard, TDD (Mechanical Initiation) and Electric Tail Fuze (Sheet 1 of 2)**

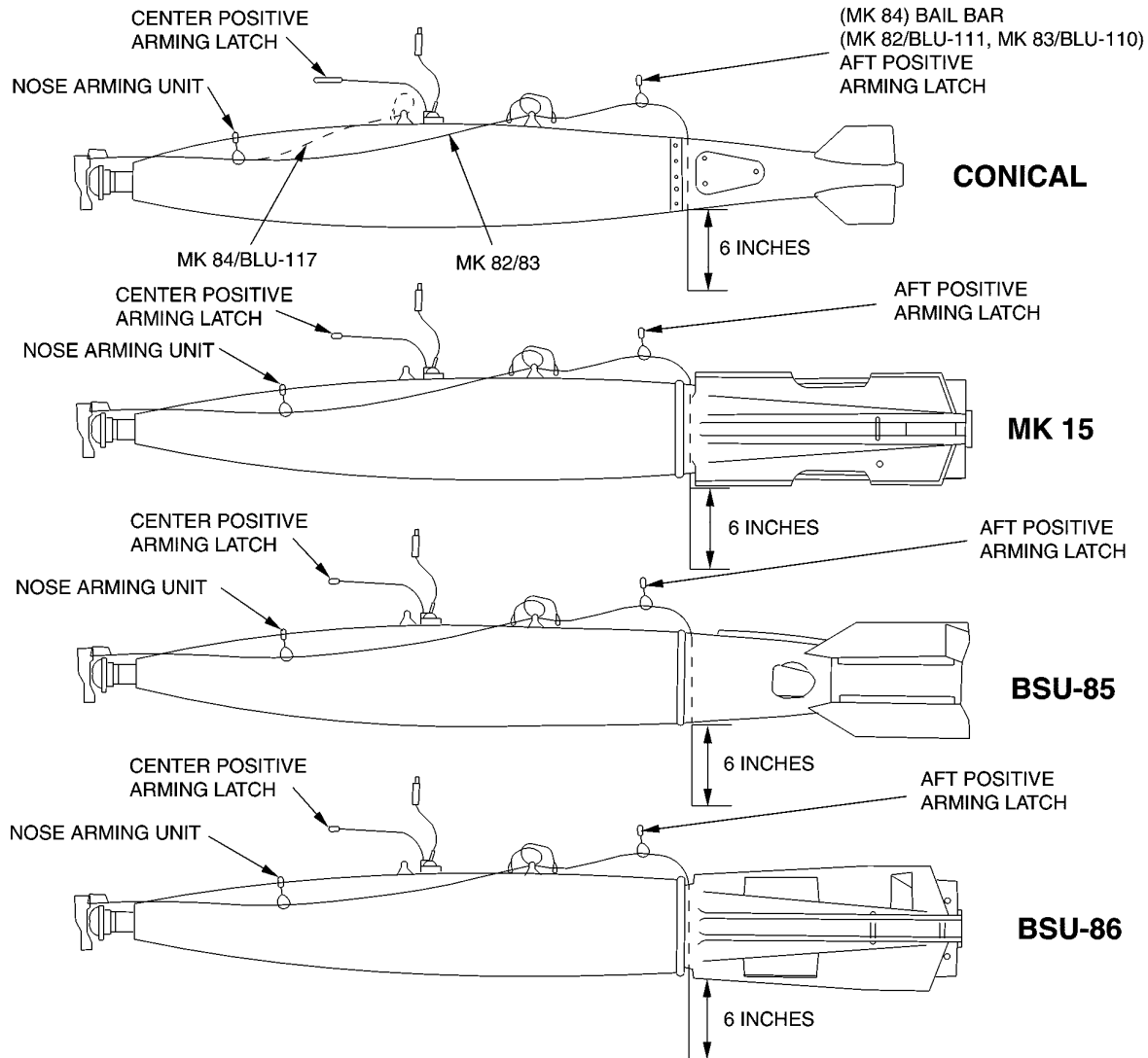
RECOMMENDED ARMING WIRE	
MK 80/BLU SERIES INERT MK 80/ALL SERIES/BDU-45/B	FMU-139A/B MK 376/MK 89 ADAPTER TDD MK 3 MK 3 COMPOSITE

ARMING WIRE ROUTING	
MK 376 TAIL FUZE/ MK 89 ADAPTER, FMU-139A/B	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO AFT LUG USING PRIMARY METHOD.</li> <li>2. (MK 84) POSITIVE ARM BY ATTACHING MAU-182 TO BAIL BAR.</li> <li>3. (MK 82/BLU-111/MK 83/BLU-110) POSITIVE ARM BY ATTACHING MAU-182 TO AFT POSITIVE ARMING LATCH.</li> <li>4. CUT FUZE ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>
TDD	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO FORWARD POSITIVE ARMING LATCH.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD (FWD LUG FOR MK 84).</li> <li>3. PASS WIRE THROUGH MAU-182 RING.</li> <li>4. INSTALL SAFETY CLIP THROUGH STRIKER ROD.</li> </ol> <p style="text-align: center;">NOTE</p> <p>TDD ARMING WIRE WILL NOT BE INSTALLED UNLESS "VT WITH DELAY MODE" IS REQUIRED. WITHOUT ARMING WIRE, SHIPPING SAFETY CLIP REMAINS INSTALLED, WARNING TAG REMOVED.</p> <ol style="list-style-type: none"> <li>5. REMOVE TAGGED SAFETY PIN.</li> </ol>

**Figure 6-7. Mk 80/BLU Series and BDU-45/B Nonretard, TDD (Mechanical Initiation) and Electric Tail Fuze (Sheet 2)**

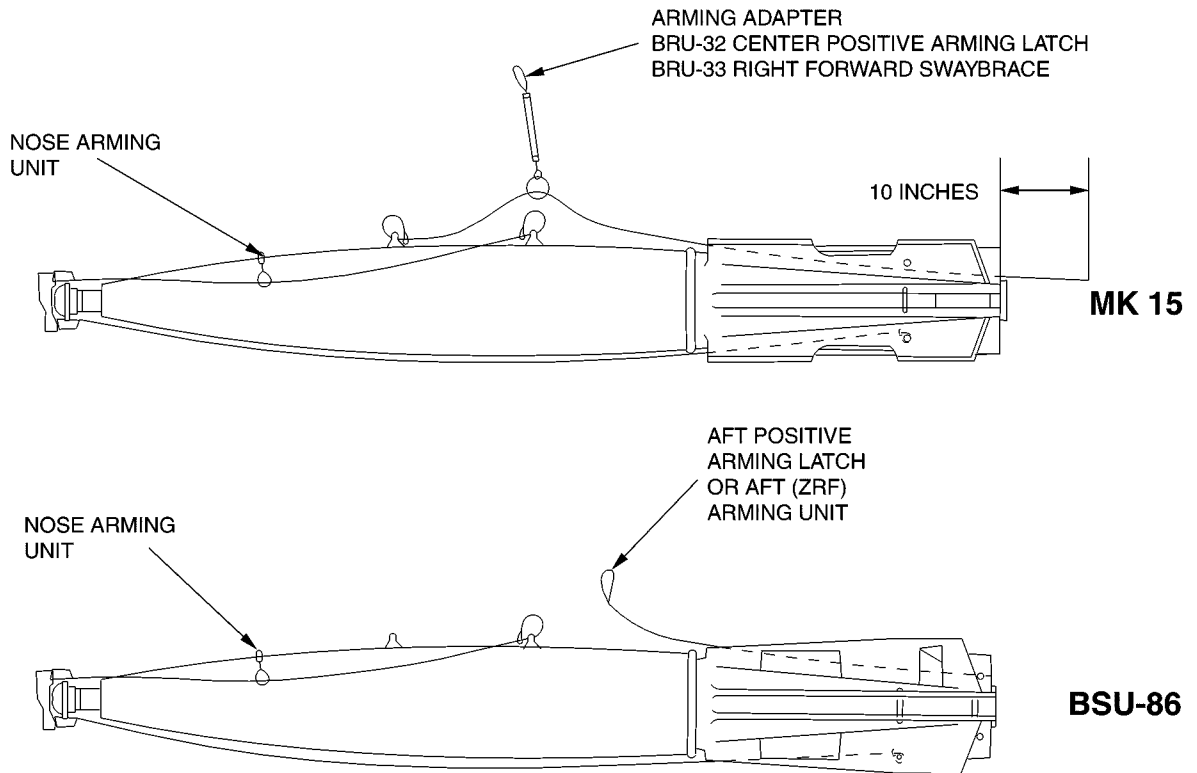
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**Bombs Retard/Nonretard**



RECOMMENDED ARMING WIRE		
ALL INERT MK 80/BDU-45	NOSE FUZE	COMPOSITE
	MK 376, FMU-139 TAIL FUZE/MK 89 ADAPTER	MK 3
MK 80/BLU-SERIES	FMU-139A/B	MK 3

ARMING WIRE ROUTING	
NOSE FUZE	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO NOSE ARMING UNIT.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD (FWD LUG FOR MK 84/BLU-117).</li> <li>3. PASS WIRE THRU MAU-182 RING.</li> <li>4. INSTALL SAFETY CLIP THRU ARMING VANE AND SECURE.</li> </ol>
MK 376 FAIL FUZE/ MK 89 ADAPTER FMU-139A/B	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO AFT LUG USING PRIMARY METHOD.</li> <li>2. (MK 84/BLU-117) POSITIVE ARM BY ATTACHING MAU-182 TO BAIL BAR.</li> <li>3. (MK 82/BLU-111/MK 83/BLU-110) POSITIVE ARM BY ATTACHING MAU-182 TO AFT POSITIVE ARMING LATCH.</li> <li>4. CUT FUZE ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>
FUZE SAFETY PIN/SAFETY WIRE	<ol style="list-style-type: none"> <li>1. REMOVE AFTER ARMING WIRE INSTALLATION.</li> </ol>

**Figure 6-8. Mk 80/BLU Series and BDU-45/B Nonretard, Mechanical Nose Fuze and Electric Tail Fuze**

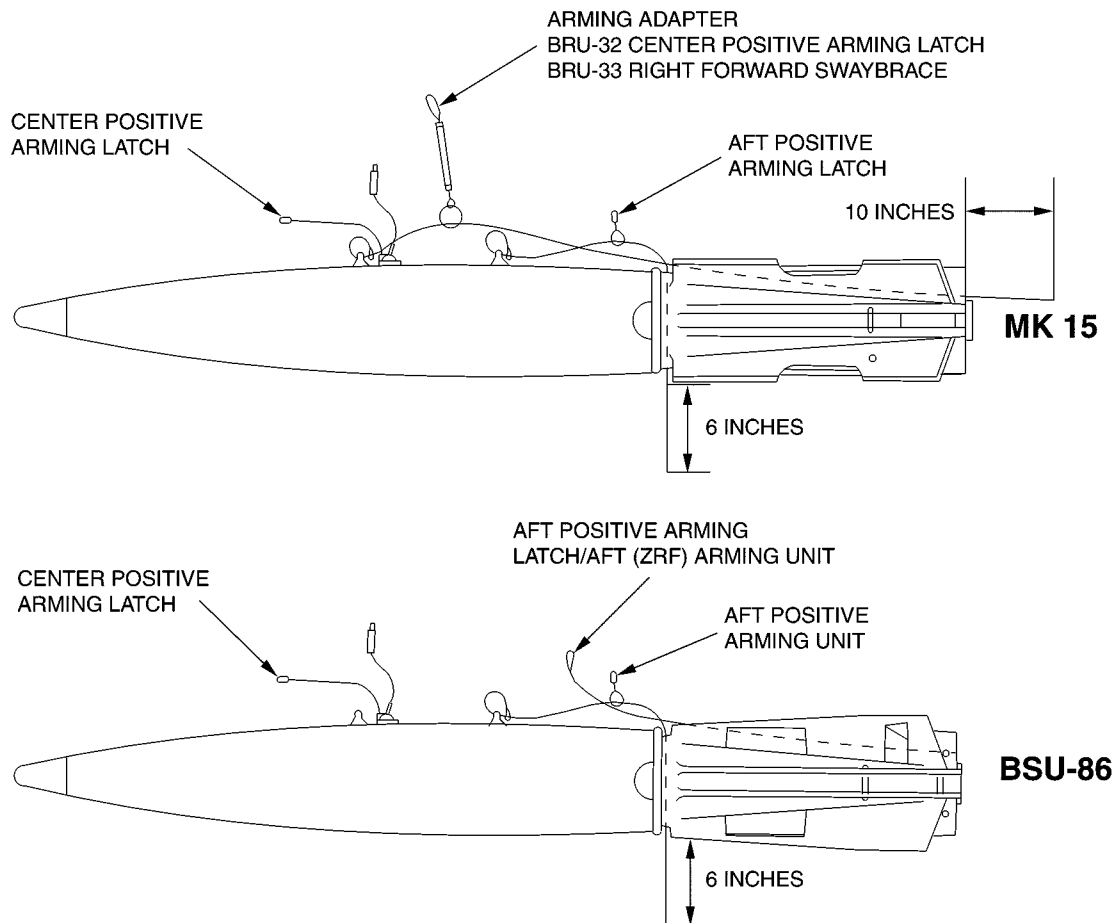


RECOMMENDED ARMING WIRE		
MK 82/BLU-111	NOSE FUZE	COMPOSITE
	FIN RELEASE	MK 1 OR 9
	FIN TO NOSE FUZE	COMPOSITE

ARMING WIRE ROUTING	
NOSE FUZE	1. CONNECT MAU-182 TO NOSE ARMING UNIT. 2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY MEHTOD. 3. PASS WIRE THRU MAU-182 RING. 4. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.
FIN TO NOSE	1. ATTACH ARMING WIRE AROUND BOTTOM FIN LINK PIN AND ROUTE FORWARD. 2. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.
FIN RELEASE (MK 15)	1. CONNECT ARMING ADAPTER TO CENTER POSITIVE ARMING LATCH (BRU-32) OR RIGHT FORWARD SWAYBRACE (BRU-33). 2. CUT ARMING WIRE 10 INCHES FROM POINT OF EXIT.
(BSU-86)	1. CONNECT TO AFT POSITIVE ARMING LATCH. 2. (PILOT OPTION) CONNECT TO AFT (ZRF) ARMING UNIT.
FUZE SAFETY WIRE	1. REMOVE AFTER ARMING WIRE INSTALLATION.

**Figure 6-9. Mk 82/BLU-111 Retard, Mechanical Nose Fuze**

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**Bombs Retard/Nonretard**

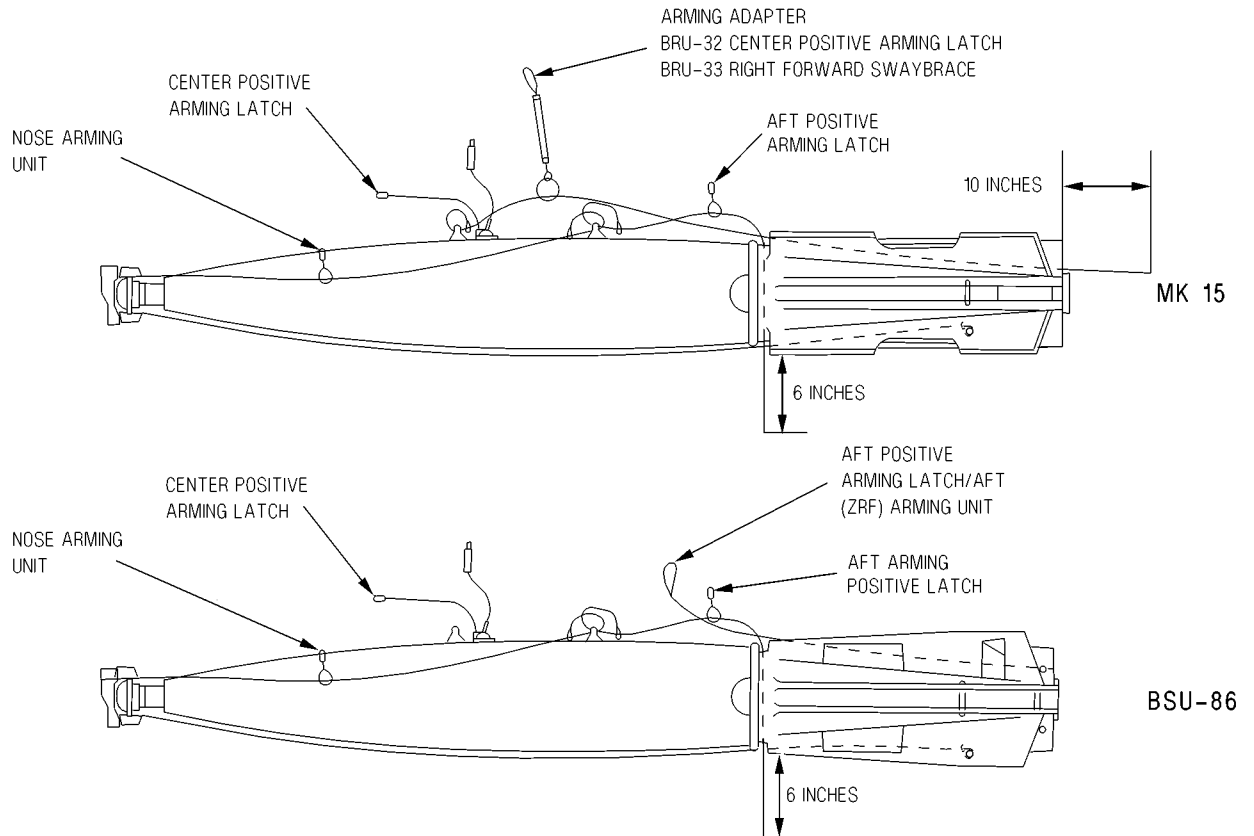


RECOMMENDED ARMING WIRE		
MK 82/BLU-111/BDU-45/B	FIN RELEASE	MK 1 OR 9
	MK 376, FMU-139A/B TAIL FUZE/MK 89 ADAPTER	MK 3

ARMING WIRE ROUTING	
FIN RELEASE (MK 15)	1. CONNECT ARMING ADAPTER TO CENTER POSITIVE ARMING LATCH (BRU-32) OR RIGHT FORWARD SWAYBRACE (BRU-33). 2. CUT FIN RELEASE WIRE 10 INCHES FROM POINT OF EXIT.
(BSU-86)	1. CONNECT TO AFT POSITIVE ARMING LATCH. 2. (PILOT OPTION) CONNECT TO AFT (ZRF) ARMING UNIT.
MK 376 TAIL FUZE/ MK 89 ADAPTER FMU-139A/B	1. ARMING WIRE ATTACHED TO AFT LUG USING PRIMARY METHOD. 2. POSITIVE ARM BY ATTACHING MAU-182 TO AFT POSITIVE ARMING LATCH. 3. CUT FUZE ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.

**Figure 6-10. Mk 82/BLU-111 and BDU-45/B Retard, Electric Tail Fuze**



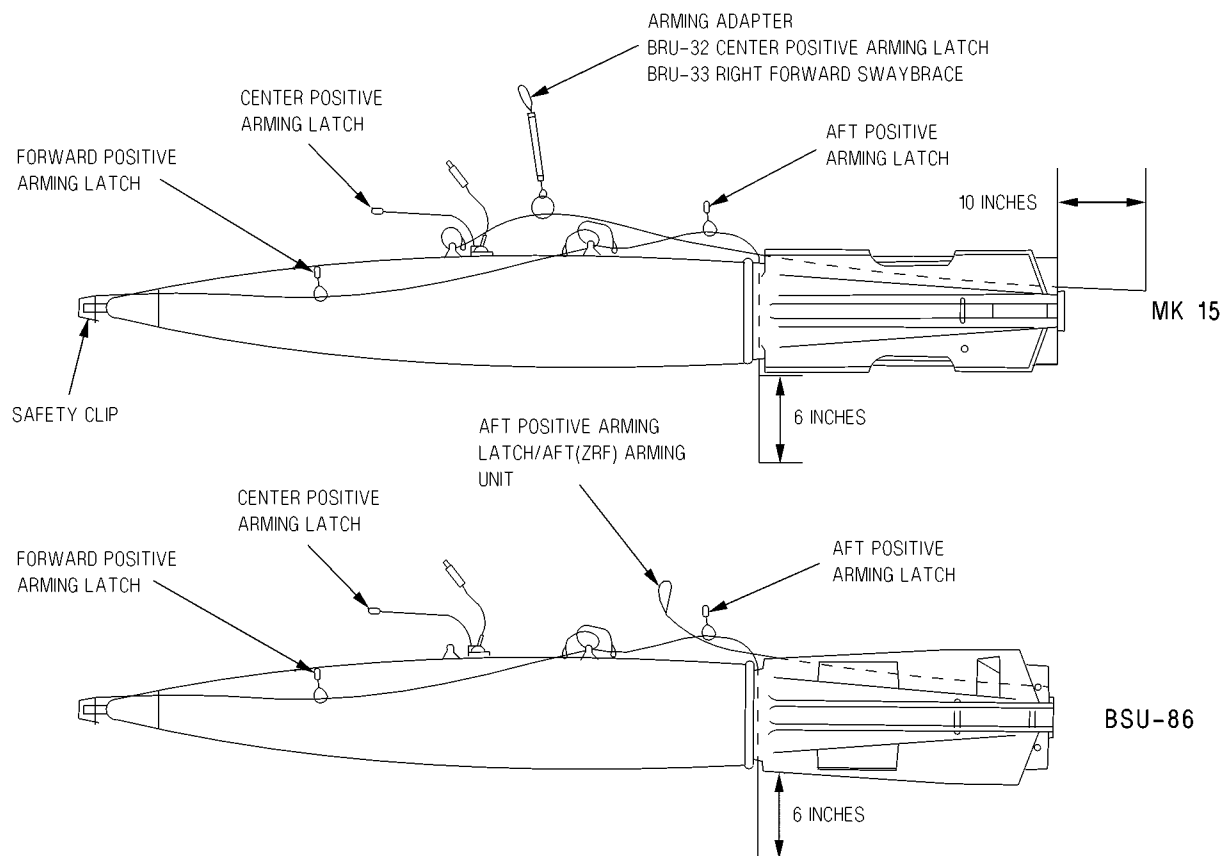


RECOMMENDED ARMING WIRE		
MK 82/BLU-111	FIN RELEASE	MK1 OR 9
	FMU-139A/B	MK 3
	FIN TO NOSE FUZE	COMPOSITE
	NOSE FUZE	COMPOSITE

ARMING WIRE ROUTING	
NOSE FUZE	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO NOSE ARMING UNIT.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD.</li> <li>3. PASS WIRE THROUGH MAU-182 RING.</li> <li>4. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.</li> </ol>
FIN TO NOSE	<ol style="list-style-type: none"> <li>1. ATTACH ARMING WIRE AROUND BOTTOM FIN LINK PIN AND ROUTE FORWARD.</li> <li>2. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.</li> </ol>
FIN RELEASE (MK 15)	<ol style="list-style-type: none"> <li>1. CONNECT ARMING ADAPTER TO CENTER POSITIVE ARMING LATCH (BRU-32) OR RIGHT FORWARD SWAYBRACE (BRU-33).</li> <li>2. CUT FIN RELEASE WIRE APPROXIMATELY 10 INCHES FROM POINT OF EXIT.</li> </ol>
(BSU-86)	<ol style="list-style-type: none"> <li>1. CONNECT TO AFT POSITIVE ARMING LATCH.</li> <li>2. (PILOT OPTION) CONNECT TO AFT(ZRF) ARMING UNIT.</li> </ol>
FMU-139A/B	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO AFT LUG USING PRIMARY METHOD.</li> <li>2. POSITIVE ARM BY ATTACHING MAU-182 TO AFT POSITIVE ARMING LATCH.</li> <li>3. CUT FUZE ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>
FUZE SAFETY PIN/WIRE	<ol style="list-style-type: none"> <li>1. REMOVE AFTER ARMING WIRE INSTALLATION.</li> </ol>

**Figure 6-11. Mk 82/BLU-111 Retard, Mechanical Nose Fuze and Electric Tail Fuze**

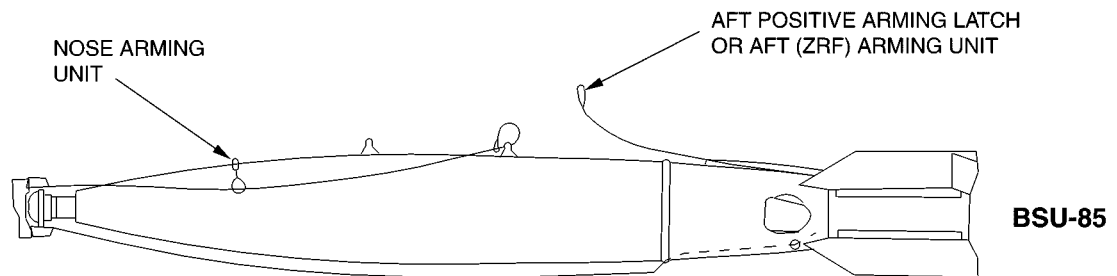
**A1-F18AE-LWS-000**  
**Bombs Retard/Nonretard**



RECOMMENDED ARMING WIRE		
MK 82/BDU-111	FMU-139A/B	MK 3
BDU-45/B	MK 376, FMU-139A/B TAIL FUZE/MK 89 ADAPTER	MK 3
ALL	FIN RELEASE	MK1 OR 9
ALL	TDD	COMPOSITE

ARMING WIRE ROUTING	
MK 376 TAIL FUZE/ MK 89 ADAPTER FMU-139A/B	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO AFT LUG USING PRIMARY METHOD.</li> <li>2. POSITIVE ARM BY ATTACHING MAU-182 TO AFT POSITIVE ARMING LATCH.</li> <li>3. CUT FUZE ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>
FIN RELEASE (MK 15)	<ol style="list-style-type: none"> <li>1. CONNECT ARMING ADAPTER TO CENTER POSITIVE ARMING LATCH (BRU-32) OR RIGHT FORWARD SWAYBRACE (BRU-33).</li> <li>2. CUT ARMING WIRE 10 INCHES FROM POINT OF EXIT.</li> </ol>
(BSU-86)	<ol style="list-style-type: none"> <li>1. CONNECT TO AFT POSITIVE ARMING LATCH.</li> <li>2. (PILOT OPTION) CONNECT TO AFT(ZRF)ARMING UNIT.</li> </ol>
TDD	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO FORWARD POSITIVE ARMING LATCH.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD.</li> <li>3. PASS WIRE THROUGH MAU-182 RING AND INSTALL SAFETY CLIP THROUGH STRIKER ROD.</li> </ol> <p>NOTE TDD ARMING WIRE WILL NOT BE INSTALLED UNLESS "VT WITH DELAY MODE" IS REQUIRED. WITHOUT ARMING WIRE SHIPPING SAFETY CLIP REMAINS INSTALLED, WARNING TAG REMOVED.</p> <ol style="list-style-type: none"> <li>4. REMOVE TDD SAFETY PIN/WIRE AFTER ARMING WIRE INSTALLATION.</li> </ol>

**Figure 6-12. Mk 82/BLU-111 and BDU-45/B Retard, TDD (Mechanical Initiation) and Electric Tail Fuze**

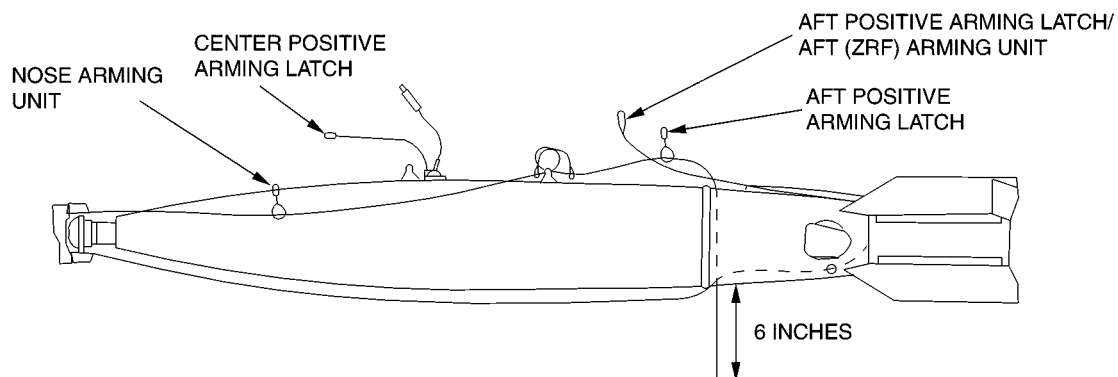


RECOMMENDED ARMING WIRE		
MK 83/BLU-110	NOSE FUZE FIN RELEASE FIN TO NOSE FUZE	COMPOSITE FIN RELEASE LANYARD COMPOSITE

ARMING WIRE ROUTING	
NOSE FUZE	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO NOSE ARMING UNIT.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD.</li> <li>3. PASS WIRE THROUGH MAU-182 RING.</li> <li>4. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.</li> </ol>
FIN RELEASE (BSU-85)	<ol style="list-style-type: none"> <li>1. CONNECT TO AFT POSITIVE ARMING LATCH.</li> <li>2. (PILOT OPTION) CONNECT TO AFT (ZRF) ARMING UNIT.</li> </ol>
FIN TO NOSE FUZE	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO SPLIT CLIP IN TAIL SECTION.</li> <li>2. ARMING WIRE EXITS HOLE IN BOTTOM OF FIN AND ROUTED ALONG UNDERSIDE OF BOMB BODY.</li> <li>3. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.</li> </ol>
FUZE SAFETY PIN/WIRE	<ol style="list-style-type: none"> <li>1. REMOVE AFTER ARMING WIRE INSTALLATION.</li> </ol>

**Figure 6-13. Mk 83/BLU-110 Retard, Mechanical Nose Fuze**

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**Bombs Retard/Nonretard**



**BSU-85**

RECOMMENDED ARMING WIRE		
MK 83/BLU-110	NOSE FUZE	COMPOSITE
	FIN RELEASE	FIN RELEASE LANYARD
	FIN TO NOSE FUZE	COMPOSITE
	FMU-139A/B	MK 3
MK 83 INERT	MK 376, FMU-139/B TAIL FUZE/MK 89 ADAPTER	MK 3

ARMING WIRE ROUTING	
NOSE FUZE	<ol style="list-style-type: none"> <li>1. CONNECT MAU-182 TO NOSE ARMING UNIT.</li> <li>2. ATTACH COMPOSITE WIRE TO AFT LUG USING PRIMARY METHOD.</li> <li>3. PASS WIRE THROUGH MAU-182 RING.</li> <li>4. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.</li> </ol>
FIN RELEASE (BSU-85)	<ol style="list-style-type: none"> <li>1. CONNECT TO AFT POSITIVE ARMING LATCH.</li> <li>2. (PILOT OPTION) CONNECT TO AFT (ZRF) ARMING UNIT.</li> </ol>
FMU-139A/B	<ol style="list-style-type: none"> <li>1. CUT ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>
MK 376, MK 89 ADAPTER	<ol style="list-style-type: none"> <li>1. CUT ARMING WIRE APPROXIMATELY 6 INCHES FROM POINT OF EXIT.</li> </ol>
FIN TO NOSE FUZE	<ol style="list-style-type: none"> <li>1. ARMING WIRE ATTACHED TO SPLIT CLIP IN TAIL SECTION.</li> <li>2. ARMING WIRE EXITS HOLE IN BOTTOM OF TAIL SECTION AND ROUTED ALONG UNDER SIDE OF BOMB BODY.</li> <li>3. INSTALL SAFETY CLIP THROUGH ARMING VANE AND SECURE.</li> </ol>
FUZE SAFETY PIN WIRE	<ol style="list-style-type: none"> <li>1. REMOVE AFTER ARMING WIRE INSTALLATION.</li> </ol>

**Figure 6-14. Mk 83/BLU-110 Retard, Mechanical Nose Fuze and Electric Tail Fuze**

2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
6. BRU-33 Adapter cable installed.
7. Suspension hooks open on unloaded stations.
8. Inspect fuzes as follows:
  - a. M904E2/E3/E4 Fuzes:
    - (1) Installed handtight.
    - (2) Arming delay set as required for mission.
  - b. (Mk 43 TDD) Safety clip installed in striker rod.
9. (DSU-33) Installed handtight; nose set screw tight.
10. Arming wires properly routed and connected.
11. (Mk 376) Fuze restraining clip is installed.
12. (If applicable) Fuze safety wires removed.
13. (If applicable) Fin release wires installed; safety pins removed.
14. (Electric fuze) Mk 122 arming safety switch lanyard connected to center positive arming latch.
15. (Electric fuze) Mk 122 cable fully seated in bomb rack receptacle.
16. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
17. Tools and handling/loading equipment removed from area.
18. Report status of aircraft to proper authority.

#### **6-15. PRIOR TO LAUNCH.**

6-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

6-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.

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2. Secure access doors and panels.

6-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for retard/nonretard bombs in the rearming area.

6-19. **ARMING AREA.** There are no procedures to be performed for retard/nonretard bombs in the arming area.

**6-20. AFTER LANDING OR GROUND ABORT.**

6-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

6-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

6-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for retard/nonretard bombs in the dearming area before engine shutdown.

6-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose or damaged notify proper authority.

1. Verify ground safety handles in LOCKED position.

**WARNING**

Do not attempt to disarm a partially or fully armed fuze. Notify proper authority.

(Mech Fuze/TDD/Mk 376) If an arming wire/safety clip is not installed in the fuze/TDD, the fuze/TDD may be partially or fully armed. Notify proper authority.

**NOTE**

The only means of determining the safe condition of Mk 376 Electric Fuzes/TDDs is by verifying the arming wire/safety clip is installed through the pop-out pin/striker rod.

2. Verify fuzes/TDDs are safe and arming wires/safety clips installed.

**WARNING**

(FMU-139) If the pop-out pin (gag rod) has extended and red/black striping is visible, the fuze is to be considered armed/unsafe. Do not attempt to reset (push back) the pop-out pin (gag rod). Notify proper authority.

**NOTE**

The FMU-139B/B and FMU-152 electric tail fuzes do not require an arming wire.

3. Verify the fuze pop-out pin (gag rod) is not extended and no red/black striping is visible.
4. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

5. (If applicable) Place WEAPON LOADED sign in cockpit.
  6. Remove arming wires/lanyards from empty stations.
  7. Report status of aircraft to proper authority.
- 6-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.
1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 6-20).
  2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
    - a. Perform applicable Aircraft Preparation/Inspection (Paragraph 6-6).
    - b. Perform applicable Weapon Inspection for bombs to be loaded (Paragraph 6-8).
    - c. (If applicable) Load bombs according to Weapon Loading procedures (Paragraph 6-10).
  3. For aircraft recovered with loaded stations, perform the following:
    - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 6-6).
    - b. Perform Weapon Inspection (Paragraph 6-8).
  4. Perform Postloading Inspection (Paragraph 6-13).
  5. Perform Prior to Launch procedures (Paragraph 6-15).
- 6-26. **WEAPON UNLOADING.**
- 6-27. **BRU-32/BRU-33 RACK PREPARATION.** Prepare BRU-32/BRU-33 for unloading as follows:
1. Position aircraft in rearming area.

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2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. (Electric fuze) Disconnect Mk 122 arming safety switch lanyard from positive arming latch and electric fuzing cable from bomb rack.

**NOTE**

(BRU-33) Arming adapter cannot be disconnected until weapon is lowered approximately 2 inches below rack.

8. Disconnect arming wires from aircraft.

**WARNING**

Do not remove a fuze or arming wire that was not installed during loading procedures.

Do not remove an arming wire unless fuze safety pin is installed.

9. Ensure that fuzes are safe by performing the following, as applicable:
  - a. M904E2 Mechanical Fuze:

**WARNING**

If safety clip is not in place or if upper window is red or is red with black letter A, consider the fuze armed. Do not attempt to change arming delay setting, to disarm the fuze or to remove the fuze from the bomb.

- (1) Verify safety clip is installed in arming wire guide and arming vane.

**NOTE**

In some fuzes a thin red band may be visible at the bottom of the upper window in the safe condition.

- (2) Verify upper (external) window does not show full red or red with black letter A.



**WARNING**

If a white stripe is not visible in upper (external) window when the arming delay is set on 6 or 18, or if a white stripe appears in the upper window when the arming delay is not set on 6 or 18, the fuze is partially armed. Notify proper authority.

(3) Ensure that upper (external) window is vacant if arming delay is not set on 6 or 18 seconds. If set on 6 or 18, ensure that white stripe appears in upper window.

(4) Install fuze safety wire.

(5) Remove arming wire safety clip.

(6) Remove fuze from bomb.

**WARNING**

If lower window is red or is red with black letter A, consider the fuze armed. Notify proper authority.

(7) Ensure that lower window is vacant or dark in color.

**NOTE**

Each fuze must be checked for safety on 6 or 18 second arming delay setting before being placed in storage.

(8) Set arming delay to 6 or 18 seconds. Ensure that white stripe appears in upper window and that lower window remains vacant or dark in color.

(9) (If applicable) Reinstall stop screw.

**NOTE**

If not for immediate use, reset arming delay to 18 seconds.

(10) Place fuze in suitable container.

b. M904E3/E4 Mechanical Fuze:

**WARNING**

If safety clip is not in place or if upper (external) window is red with black letter A, consider the fuze to be armed. Do not attempt to change arming delay settings, to dearm the fuze, or to remove the fuze from the bomb. Notify proper authority when an armed or partially armed condition is indicated.

(1) Verify that safety clip is installed in the arming wire guide and arming vane.

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**Bombs Retard/Nonretard**

- (2) Ensure that the upper (external) window does not show red with black letter A.

**WARNING**

If green background without 6 or 18 appears in upper (external) window when the arming delay is set on 6 or 18, or if the number in the upper (external) window does not match the arming delay setting number, the fuze is partially armed. Notify proper authority.

- (3) Ensure that upper (external) window is vacant if arming delay is not set on 6 or 18 seconds. If set on 6 or 18, ensure that green background with matching number appears in window.

- (4) Install fuze safety wire.
- (5) Remove arming wire safety clip.
- (6) Remove fuze from bomb.

**WARNING**

If lower window is red or is red with black letter A, consider fuze armed. Notify proper authority.

- (7) Ensure that lower window is vacant or dark in color.

**NOTE**

Each fuze must be checked for safe condition on 6 or 18 second arming delay setting before being placed in storage.

- (8) Set arming delay to 6 or 18 seconds. Ensure that green background with white number 6 or 18, depending on arming delay setting, appears in upper window. Lower window must remain vacant or dark in color.

- (9) (If applicable) Reinstall stop screw.

**NOTE**

If not for immediate use, reset arming delay to 18 seconds.

- (10) Place fuze in suitable container.

- c. (Mk 376) Electric Fuzes:

**WARNING**

If arming wire is not installed in the fuze, the fuze may be partially armed. Notify proper authority.

**NOTE**

The only means of determining the safe condition of electric fuzes is by observing that the arming wire is installed through the pop-out pin.

- (1) (Mk 376) Verify arming wire is installed in pop-out pin.

- d. FMU-139 Electric Fuzes:

**WARNING**

If the pop-out (gag rod) has extended and red/ black striping is visible, the fuze is to be considered armed/unsafe. Do not attempt to reset (push back) the pop-out pin (gag rod). Notify proper authority.

**NOTE**

The FMU-139B/B and FMU-152 Electric Tail Fuzes do not require an arming wire.

- (1) (Mk 376/FMU-139A/B) Verify arming wire is installed and the fuze pop-out pin (gag rod) is not extended and no red/black striping is visible.

- e. Mk 43 TDD:

**CAUTION**

If the Mk 43 is accidentally initiated during handling, it will become warm to the touch until the battery is exhausted. Units can be initiated by withdrawal of the safety clip. Should this occur, the unit is no longer operable and must be rejected.

- (1) Safety clip installed in striker rod.
- (2) Unscrew and remove Mk 43.
- (3) Replace instruction tag on nose and shipping cap and tag on base of element.
- (4) Place element in suitable container.

- f. DSU-33:

- (1) Retract set screw.
- (2) Remove DSU-33.

**NOTE**

Landing gear doors must be retracted when unloading centerline station.

10. (If applicable) Retract landing gear doors and hold in position (Paragraph 5-19).

**CAUTION**

Verify handling/loading equipment is configured to accept weapon being unloaded.

11. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
12. Position handling/loading equipment under station to be unloaded and secure.
13. Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with tiedown straps.
14. Bomb hoist unloading (Paragraph 5-33).
  - a. Install hoisting band and trolleys on weapon.

**CAUTION**

Do not use excessive force when operating hoist to support weapon.

- b. Operate hoist until hoist is supporting weapon.
  - c. Position one person at nose and one person at tail of weapon to steady and guide weapon onto handling equipment.
15. Manual hoisting bar unloading.

**CAUTION**

Extreme care must be exercised when installing manual hoisting bar to prevent cross threading of bar in bomb fuze well.

- a. Install manual hoisting bar in fuze well and tail (Figure 6-3).

**6-28. BRU-32/BRU-33 UNLOADING.** Unload BRU-32/BRU-33 as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.

**NOTE**

Arming adapter must be disconnected after weapon has been lowered approximately 2 inches below rack.

- c. (BRU-33) Lower bomb truck/weapon loader approximately 2 inches and disconnect arming adapter from aircraft.
  - d. Lower weapon.
2. (If applicable) Bomb hoist unloading:
- a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.

**NOTE**

Arming adapter must be disconnected after weapon has been lowered approximately 2 inches below rack.

- c. (BRU-33) Operate hoist to lower weapon approximately 2-inches and disconnect arming adapter from aircraft.
  - d. Lower weapon onto handling equipment.
  - e. Secure weapon to handling equipment with weapon tiedown straps.
3. (If applicable) Manual hoisting bar unloading:
- a. Rotate ground safety handle to UNLOCKED.
  - b. Support weapon weight and rotate MANUAL RELEASE to open suspension hooks.

**NOTE**

Arming adapter must be disconnected after weapon has been lowered approximately 2-inches below rack.

- c. (BRU-33) Lower weapon approximately 2-inches and disconnect arming adapter from aircraft.
  - d. Lower weapon onto handling equipment.
  - e. Secure weapon to handling equipment with weapon tiedown straps.
4. Remove handling/loading equipment with weapon from under aircraft.

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5. Install cartridge retainers and auxiliary cartridge caps.
6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove weapons and handling/loading equipment from area.

## **SECTION VII**

### **GUIDED BOMB UNITS (GBU)**

#### **7-1. INTRODUCTION.**

7-2. This section contains loading and unloading information for the guided bomb units (GBUs) listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV, and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

#### **NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

GBU-10 Guided Bomb Unit  
GBU-12 Guided Bomb Unit  
GBU-16 Guided Bomb Unit  
GBU-24 Guided Bomb Unit

#### **7-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

7-4. ASE authorized for loading GBUs is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

7-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. Torque Wrench (in-lb).
2. GBU-CCG switch key (PN 1393AS450).

#### **7-6. AIRCRAFT PREPARATION/INSPECTION.**

7-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, if applicable Paragraph 5-11, and as follows:

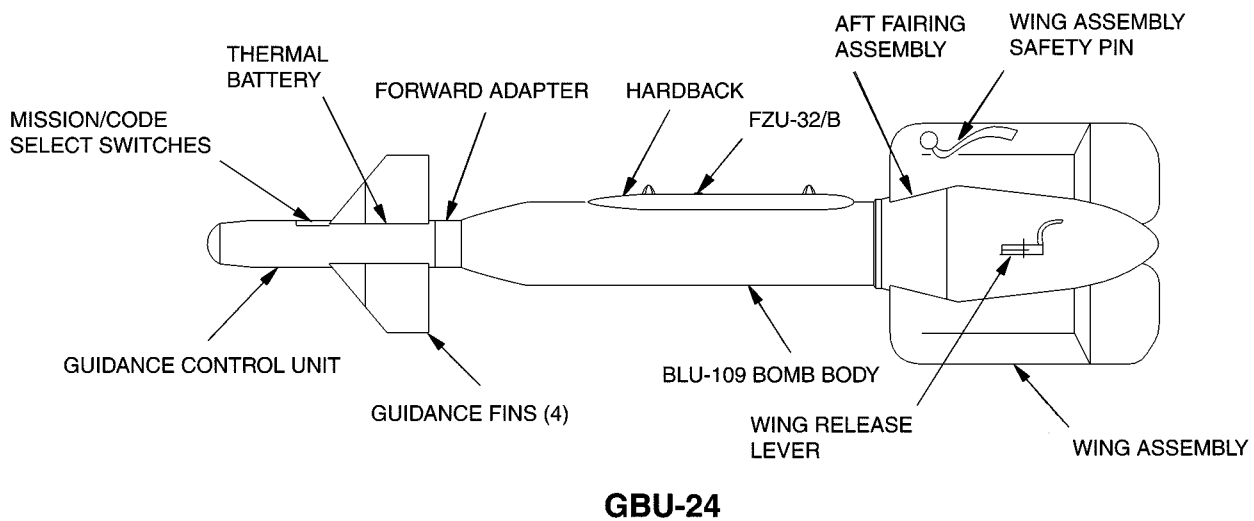
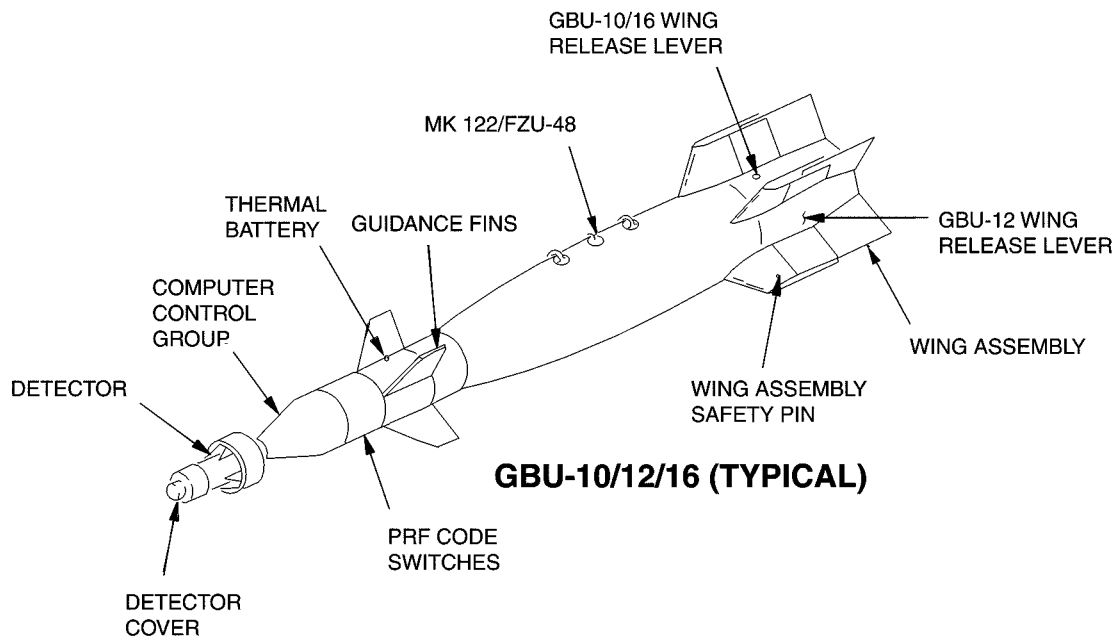
1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. (As applicable) Verify BRU-32 swaybraces are properly seated against BRU-33.
4. (As applicable) Verify adapter cable installed (Figure 3-5 and 3-6).

#### **7-8. WEAPON INSPECTION.**

7-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows:

1. Ensure weapon is properly assembled and not damaged (Figure 7-1).

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**Guided Bomb Units**



**Figure 7-1. GBU-10, GBU-12, GBU-16 and GBU-24 Inspection (Sheet 1 of 2)**



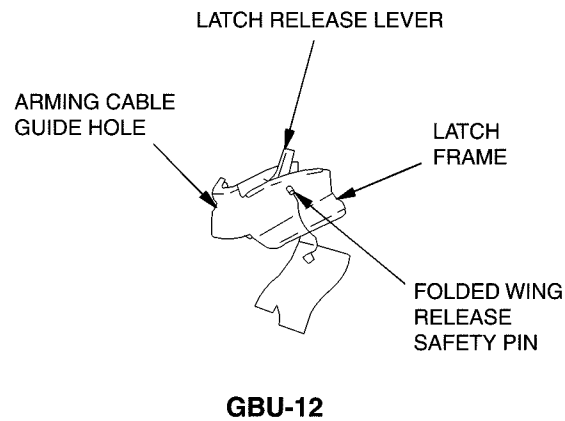
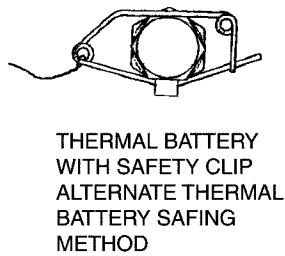
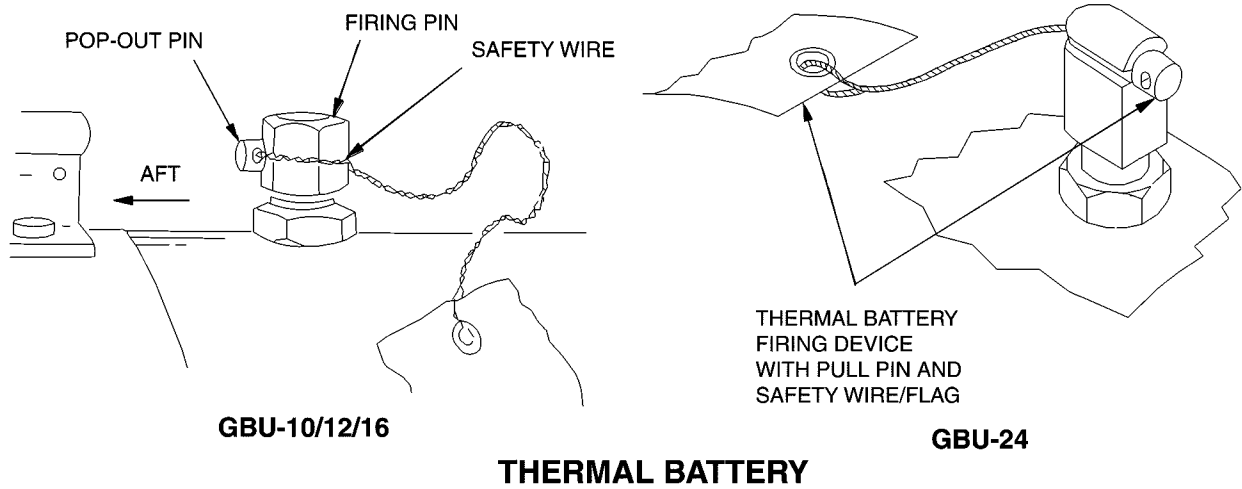


Figure 7-1. GBU-10, GBU-12, GBU-16 and GBU-24 Inspection (Sheet 2)

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**Guided Bomb Units**

2. Verify that suspension lugs are installed with base of lug eye flush with bomb surface and aligned.

**WARNING**

Inadvertent release of wing can inflict serious personal injury.

3. Verify safety pins and streamers are installed in latch release lever and collar of wing assembly (Figure 7-2).
4. Inspect wings for alignment and security of installation.
5. GBU-10/12/16:

**NOTE**

If Mk 122 cable is damaged, or safety switch lanyard has been pulled, the entire Mk 122 assembly must be replaced.

If FZU-48/B is damaged or lanyard has been pulled, the FZU-48 must be replaced.

- a. Ensure Mk 122 safety switch or FZU-48 is installed in charging receptacle and not damaged. Inspect as follows (Figure 7-3):

- (1) (Mk 122) Lanyard not pulled; electrical quick disconnect connector serviceable cable not broken or separated from switch housing.

- (2) (FZU-48) Lanyard not pulled, pull ring present, swaging sleeves secure, break link not damaged, and cable not frayed.

- (3) (FZU-61/B, if applicable) Pull ring present, swaging secure, break link not damaged, and cable not frayed.

**NOTE**

The FZU-61/B Firing Lanyard is used only with the FZU-48/B and FMU-139B/B Electric Tail Fuze and does not use a fuze arming wire.

Mk 84 Mod 6/7 and BLU-117 with FZU-48/B and FZU-61/B Firing Lanyard requires the use of the short leg of FZU-61/B. All other bomb bodies will use the long leg of FZU-61/B. Lanyard leg not being used will be cut off at the swedge.

GBU to be loaded on BRU-33 will not use FZU-61/B Firing Lanyard.

- b. (If applicable) (FZU-48/B with FZU-61/B) FZU-61/B Firing Lanyard installed on FZU-48/B; lanyard taped to weapon.

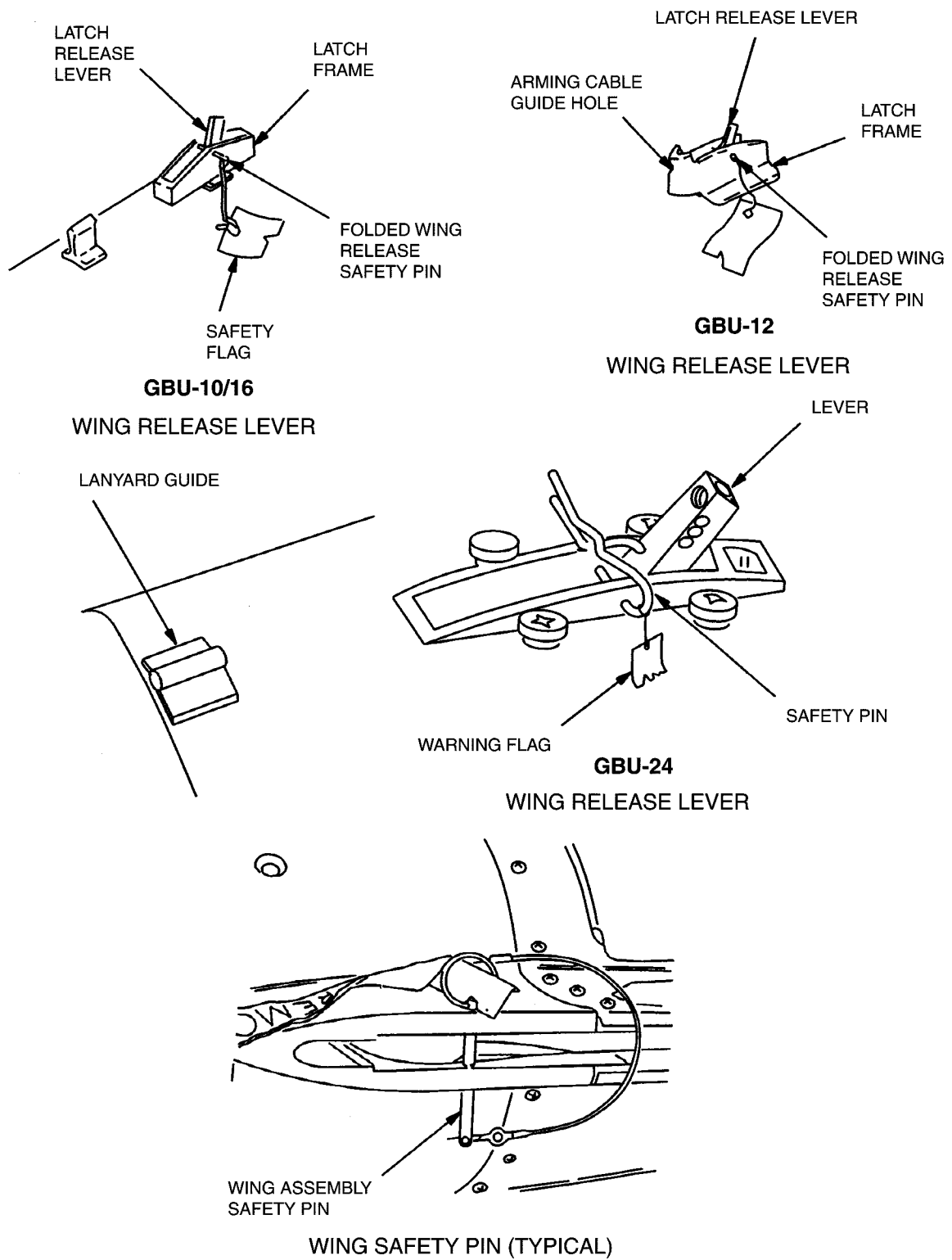
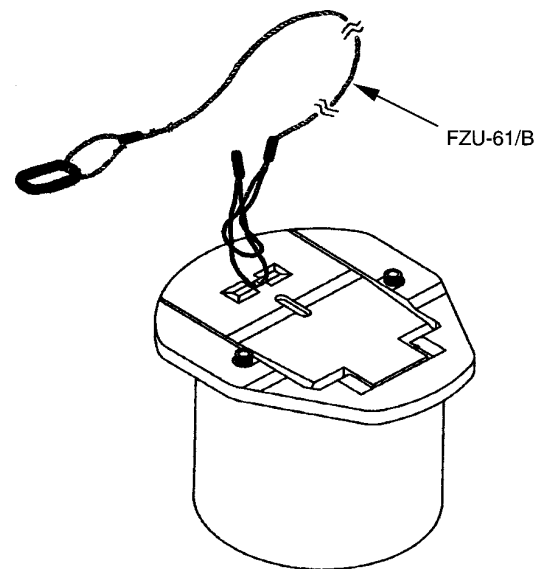
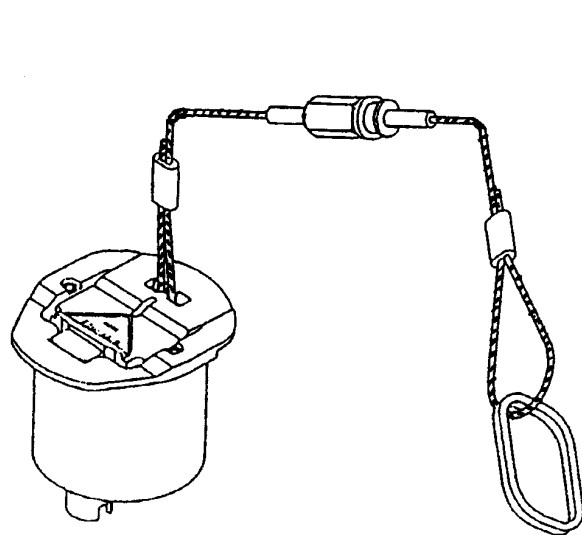
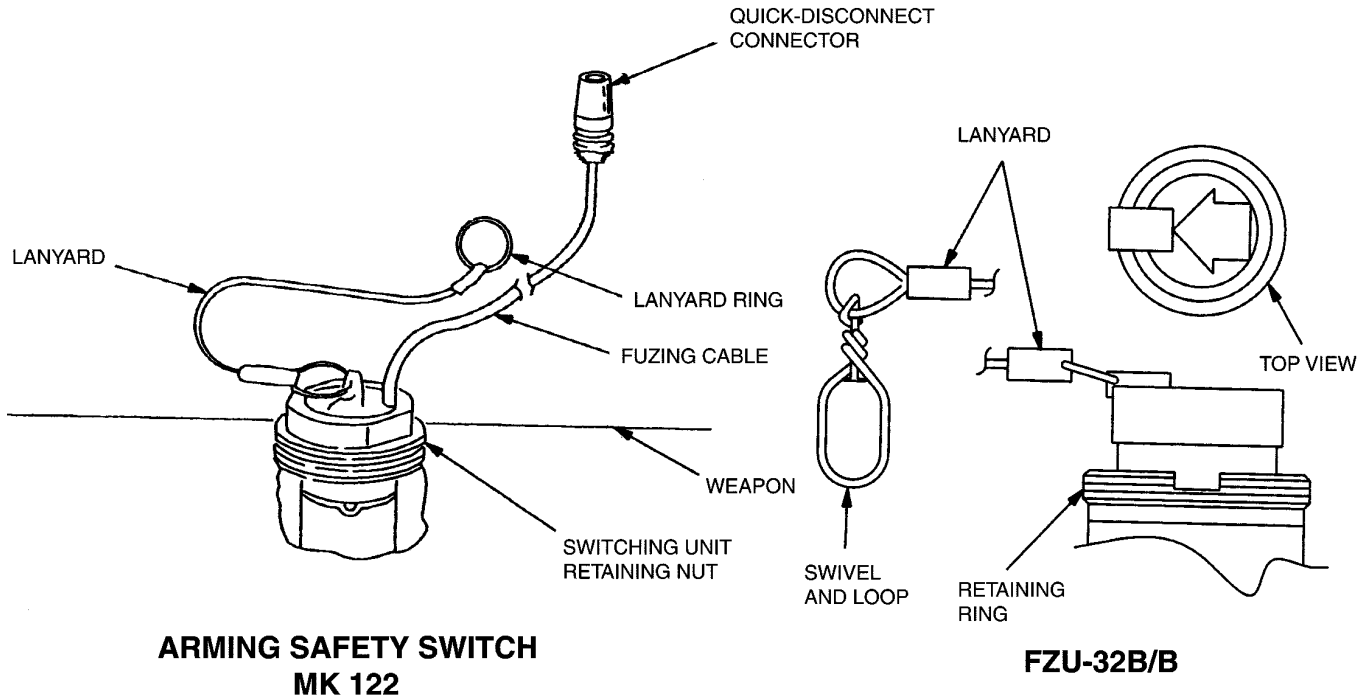


Figure 7-2. Wing Release Lever and Wing Safety Pin



**Figure 7-3. Mk 122, FZU-32B/B, and FZU-48/B**



(GBU-10) Electric fuze arming wire must be routed through wing assembly from right to left. Looking from aft of bomb.

**NOTE**

The FMU-139A/B and Mk 376 electric tail fuze require the use of an arming wire.

The FMU-139B/B and FMU-152 electric tail fuze do not use an arming wire.

(GBU-10, 12, 16) Weapon with FMU-139 and FZU-48 without FZU-61/B require fuze arming wire.

c. (As applicable) Verify fuze arming wire is attached to aft lug, through MAU-182, and through wing assembly with two Fahnstock clips installed on arming wire inside wing assembly between the arming wire entrance hole and fuze gag rod. Arming wire extends below wing assembly (Figure 7-4).

d. Verify safety (cotter) pins and warning tags are removed from fuze pop-out pin/gag-rod.

e. (FMU-139) Verify fuze arm delay data is marked on weapon.

f. Ensure decal or other appropriate marking is affixed to bomb wing assembly indicating type of fuze installed.

6. GBU-24:

a. FZU-32 initiator installed (Figure 7-3).

b. FMU-143 fuze arming pin installed and the tagged safety pin is removed (Figure 7-4).

c. Fuze arming cable is attached to fuze arming pin through hole in tail assembly and attached to safe jettison lanyard. Safe jettison lanyard is attached to aft suspension lug.

d. FMU-143 set 12 second ARM and .060 second DELAY ONLY.

7. Verify forward adapter assembly arming wire guide is aligned with suspension lugs.

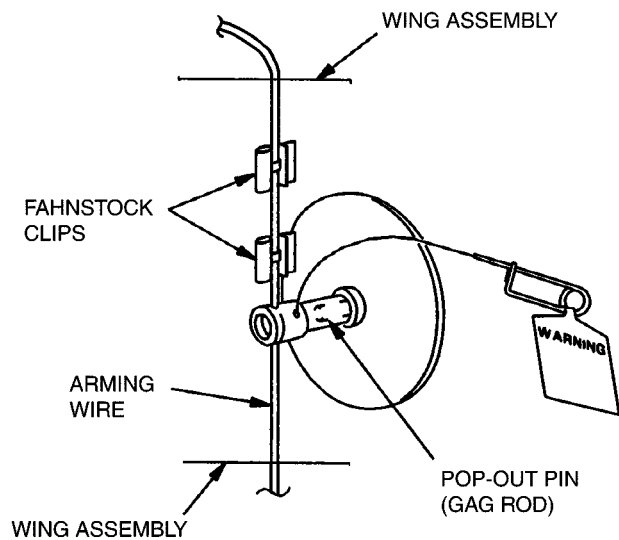
**NOTE**

Thermal battery arming cable must be installed after weapon is loaded.

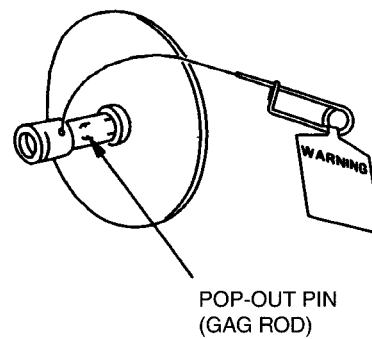
8. Ensure thermal battery arming cable and wing release cable is with weapon.

9. Detector/Computer Control Group (CCG):

a. Guidance fins available.



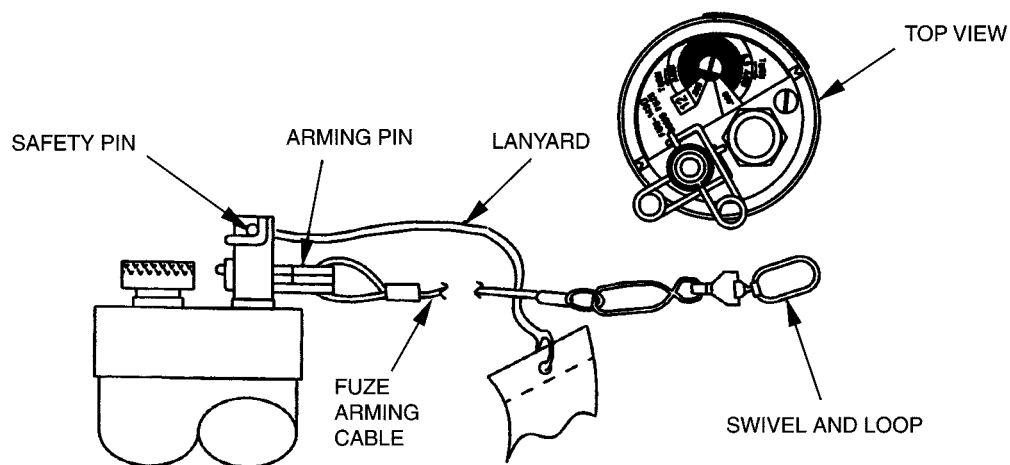
**FMU-139A/B ONLY**



**FMU-139B/B**

**NOTE**

FAHNSTOCK CLIPS MUST BE INSTALLED BUT MAY NOT BE EXACTLY IN POSITION SHOWN.



**FMU-143**

**Figure 7-4. Electric Tail Fuze Inspection**

- b. Verify thermal battery safety wire/safety clip is installed.
- c. Remove detector cover and if applicable, packing material.
- d. Verify detector dome is clean and not damaged.
- e. (Except MAU-169H/B and MAU-209) Verify humidity indicator indicates good (blue/green).
- f. (GBU-10/12/16) Verify detector moves freely.
- g. Reinstall detector cover and if applicable, packing material.

## **7-10. WEAPON LOADING.**

7-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify that Aircraft Preparation/Inspection (Paragraph 7-6) and Weapon Inspection (Paragraph 7-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. 161353 thru 165206: Position PP-6419 power supply 115 VAC circuit breaker to ON.
5. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
6. Position handling/loading equipment with weapon under station to be loaded and secure.
7. (If applicable) Bomb hoist loading (Paragraph 5-33):
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.
  - d. Remove weapon tie down straps securing weapon to handling equipment.
8. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

7-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:

<b>CAUTION</b>
----------------

(GBU-10/12/16) Verify arming wires are positioned between bomb lug and swaybrace pads before suspension hooks close.

(GBU-12) To ensure thermal battery arming cable guide does not damage pylon use care when raising weapon.

Do not use guidance/computer control group for handling.

(GBU-24) A pull force of 30 lb. will activate and render the initiator unserviceable.

**NOTE**

If Mk 122 Arming Safety Switch Lanyard is pulled during loading, refer to Paragraph 5-40 for replacement criteria.

- a. (GBU-12/16 with fuze arming wire) Ensure swivel loop of Mk 3 Arming Wire is positioned on side of bomb suspension lug as the positive arming latch.
- b. (GBU-10 with fuze arming wire) Ensure swivel loop of Mk 3 Arming Wire is positioned on side of bomb suspension lug opposite the positive arming latch.

**NOTE**

To aid connecting the Mk 122 Fuzing Cable, cable may be connected as weapon is being raised. Stop raising weapon approximately 4 inches below bomb rack. Connect fuzing cable then continue raising weapon.

(GBU-12 on BRU-33) To facilitate rigging of the wing release lanyard, load BGU on BRU-33 starboard station first. Rigging the wing release lanyard may be done prior to loading BRU-33 port station.

- c. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- d. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tie down straps should be loosened prior to lowering loading equipment.

- e. Lower bomb truck/weapon loader until weapon weight is supported by rack suspension hooks.
- f. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.



- g. Rotate ground safety handle to the LOCKED position.
  - h. Remove weapon tie down straps.
2. (If applicable) Bomb hoist loading:

<b>CAUTION</b>
----------------

(GBU-10/12/16) Verify arming wires are positioned between bomb lug and swaybrace pads before suspension hooks close.

(GBU-12) To ensure thermal battery arming cable guide does not damage pylon use care when raising weapon.

Do not use detector for handling.

(GBU-24) A pull force of 30 lb. will activate and render the initiator unserviceable.

**NOTE**

If Mk 122 arming safety switch lanyard is pulled during loading, refer to Paragraph 5-40 for replacement criteria.

- a. (GBU-12/16 with fuze arming wire) Ensure swivel loop of Mk 3 arming wire is positioned on side of bomb suspension lug as the positive arming latch.
- b. (GBU-10 with fuze arming wire) Ensure swivel loop of Mk 3 arming wire is positioned on side of bomb suspension lug opposite the positive arming latch.
- c. Ensure swivel loop of Mk 3 arming wire is positioned on the same side of aft bomb suspension lug as positive arming latch of the bomb rack being loaded.

**NOTE**

To aid connecting the Mk 122 Fuzing Cable, cable may be connected as weapon is being raised. Stop raising weapon approximately 4 inches below bomb rack. Connect fuzing cable then continue raising weapon.

- d. Hoist weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- e. Visually inspect rack indicates LOCKED (Paragraph 5-9).
- f. Ease hoist until weapon weight is supported by bomb rack suspension hooks.
- g. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
- h. Rotate ground safety handle to the LOCKED position.

**Guided Bomb Units**

3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.
4. GBU-10/12/16:
  - a. (Mk 122) Electrically connect Mk 122 cable.
  - b. (Mk 122) Attach Mk 122 lanyard to center positive arming latch.
  - c. (FZU-48 without FZU-61) Attach FZU-48 lanyard to center positive arming latch.
  - d. (FZU-48 with FZU-61) Attach FZU-61 lanyard extension to aft arming unit.
5. GBU-24:
  - a. Attach FZU-32 lanyard to center positive arming latch.
  - b. Attach fuze/safe jettison lanyard swivel loop to aft arming unit.
6. Install fins; torque to  $35 \pm 5$  in-lb.

<b>CAUTION</b>
----------------

Do not remove thermal battery safety wire/clip prior to installing arming cable.

Exercise care when installing arming cable to preclude actuation of thermal battery firing pin assembly.

7. Install/connect thermal battery arming cable, fin arming cable and, as applicable, fuze arming wire (Figure 7-5). Refer to Paragraph 5-27 for general arming wire information.

8. (If applicable) Remove thermal battery safety pin/wire/clip.

<b>CAUTION</b>
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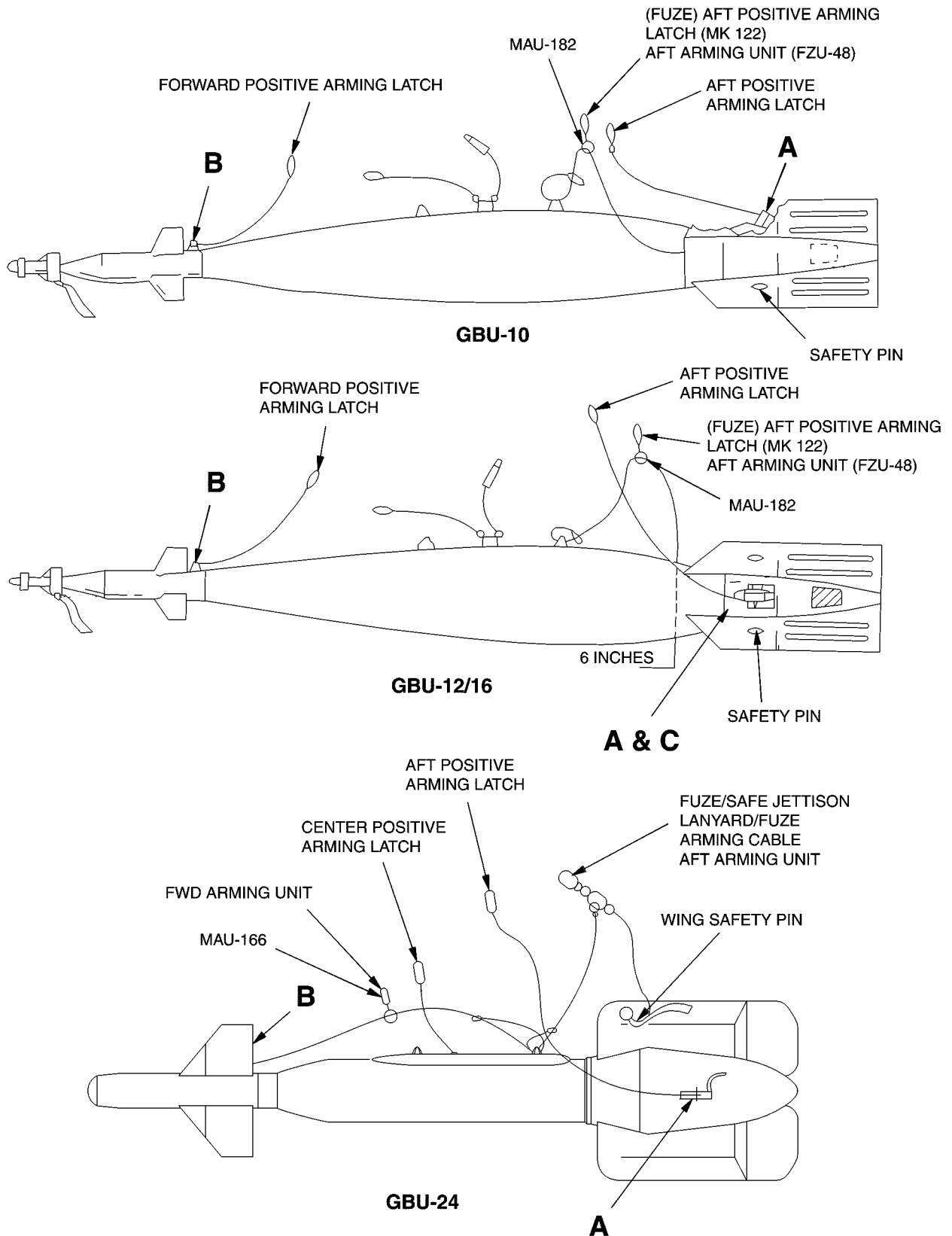
Care must be taken, when setting PRF and weapon type switches, switch limits are not to be exceeded. Exceeding switch limits will damage the set screw causing loss of the switch knob.

**NOTE**

If PRF or weapon type switch knob is missing, the use of the GBU-CCG Switch Key (PN 1393AS450) will be required to set/verify switches to the proper position.

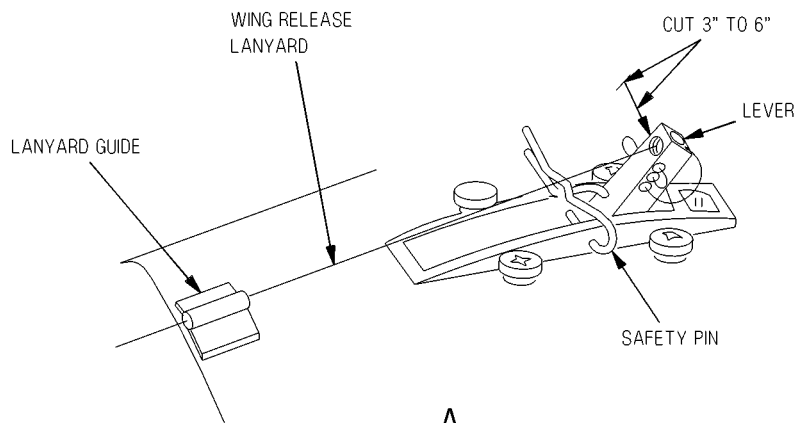
To ensure proper switch positions, set GBU switches at first counterclockwise position and count switch positions by turning clockwise.

9. (WCU-10) Ensure weapon type switch is set to STD LGB.
10. (GBU-10/12/16) Set pulse repetition frequency (PRF) code select switches as directed (Figure 7-6).
11. (GBU-24) Set mission select and code switches as directed (Figure 7-6).
12. (As required) Perform inventory/BIT check (Paragraph 5-39).



**Figure 7-5. GBU-10, GBU-12, GBU-16 and GBU-24 Arming Wire Inspection**  
 (Sheet 1 of 3)

**A1-F18AE-LWS-000**  
**Guided Bomb Units**



**A**

**NOTE**

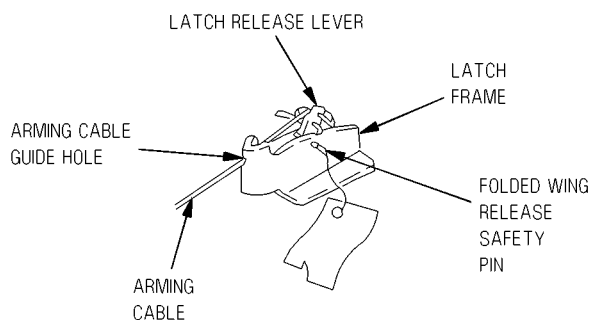
GBU-10, GBU-16

LANYARD GUIDE NOT USED. WING RELEASE LANYARD MUST BE ROUTED THROUGH THE TOP FORE AND AFT HOLE OF THE LATCH RELEASE LEVER THEN THROUGH THE TOP SIDE OF SIDE HOLE AND LACED DOWN.

**NOTE**

GBU-24

WING RELEASE LANYARD MUST BE ROUTED THROUGH THE LANYARD GUIDE, THE TOP FORE AND AFT HOLE OF THE LATCH RELEASE LEVER, THEN THE BOTTOM SIDE TO SIDE HOLE OF THE LATCH RELEASE LEVER AND LACED UP.

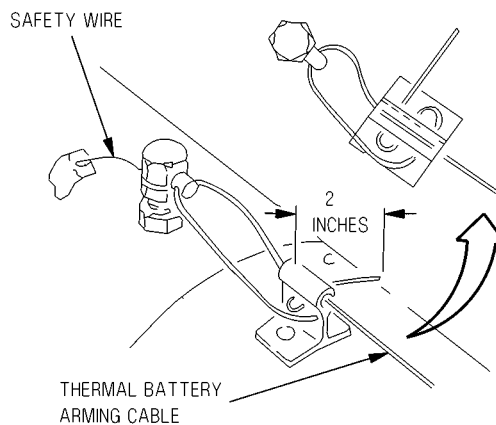


**C**

**NOTE**

GBU-12

THE LANYARD MUST BE ROUTED THROUGH THE ARMING CABLE GUIDE HOLE, THROUGH THE TOP FORE AND AFT HOLE OF THE LATCH RELEASE LEVER THEN THROUGH THE TOP SIDE TO SIDE HOLE AND LACED DOWN.



**B**



**Figure 7-5. GBU-10, GBU-12, GBU-16 and GBU-24 Arming Wire Inspection**  
**(Sheet 2 of 3)**

RECOMMENDED ARMING WIRE	
THERMAL BATTERY/FIN RELEASE	ARMING CABLE (SUPPLIED WITH WEAPON)
TAIL FUZE	MK 3

[illegible]

**Figure 7-5. GBU-10, GBU-12, GBU-16 and GBU-24 Arming Wire Inspection  
(Sheet 3)**

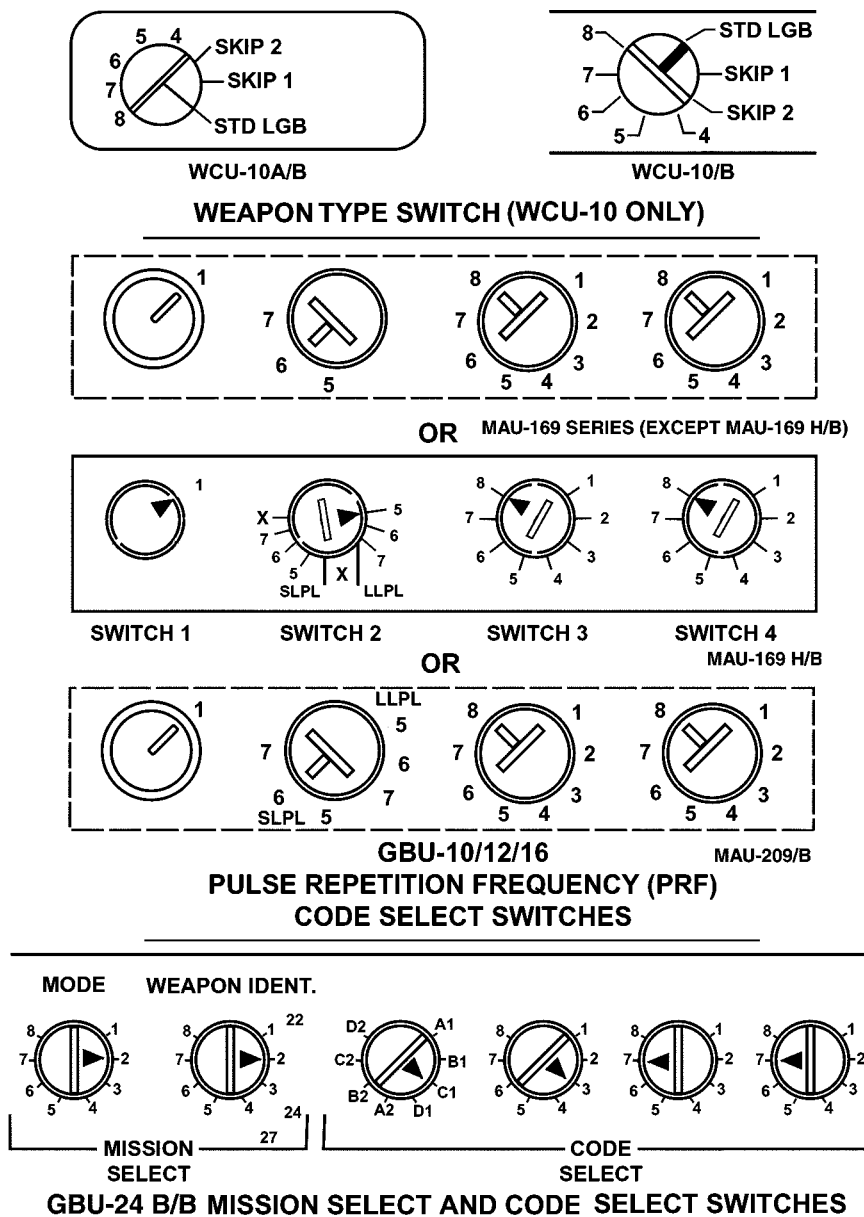


Figure 7-6. GBU Select Switches

13. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
14. Place WEAPON LOADED sign in cockpit.
15. Remove tools and handling/loading equipment from area.

#### **7-13. POSTLOADING INSPECTION.**

7-14. Perform Postloading Inspection for weapons loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
6. Verify suspension hooks open on unloaded stations.
7. Inspect GBUs as follows:
  - a. Safety pins and streamers are installed in latch release lever and collar of wing assembly.
  - b. Arming wire/arming cable properly installed.
  - c. Thermal battery and fuze safety pin/wire/clip removed.
  - d. PRF/mission select/code select switches set as directed.
  - e. (WCU-10) Weapon type switches are set to STD LGB.
  - f. Detector cover and if applicable, packing material installed.
  - g. (GBU-10/12/16) Mk 122 Arming Safety Switch/FZU-48 lanyard attached to center positive arming latch.
  - h. (GBU-10/12/16) FZU-48 with FZU-61 lanyard extension attached to aft arming unit.
  - i. (GBU-10/12/16) Mk 122 cable fully seated in bomb rack receptacle.
  - j. (GBU-10/12/16) (As applicable) Electric fuze MAU-182 attached to aft positive arm latch or aft arming unit.

**Guided Bomb Units**

k. (GBU-24) FZU-32B/B Lanyard attached to center positive arming latch.

l. Fins installed.

8. Proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).

9. Tools and handling/loading equipment removed from area.

10. Report status of aircraft to proper authority.

**7-15. PRIOR TO LAUNCH.**

7-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

7-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Remove detector cover and if applicable, packing material.
3. Remove safety pins from latch release lever and collar of wing assemblies.
4. Secure access doors and panels.

7-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for GBUs in the rearming area.

7-19. **ARMING AREA.** There are no procedures to be performed for GBUs in the arming area.

**7-20. AFTER LANDING OR GROUND ABORT.**

7-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

7-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

7-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for GBUs in the dearming area before engine shutdown.

7-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.



**WARNING**

(MAU-169, except MAU-169H/B) If thermal battery is inadvertently ignited, the hot gas generator will emit extremely high temperature high pressure non-toxic exhaust gases. Avoid breathing vented gases. If possible, allow heated components to cool before handling. If required, weapon may be downloaded and moved to a safe area for 90 minutes from time of activation. Use added care and wear personnel protection (gloves) when handling.

(MAU-169H/B/MAU-209) If thermal battery is inadvertently ignited, the cold gas generator will fire and the GCU will become hot to the touch. Weapon should be downloaded and moved to a safe area for 90 minutes from time of activation. Use added care and wear personnel protection (gloves) when handling.

If any component is missing, loose, or damaged notify proper authority.

Do not attempt to dearm a partially or fully armed fuze. Notify proper authority.

(Mk 376 or FMU-139 with FZU-48 without FZU-61) If an arming wire is not installed in fuze, the fuze may be armed. Notify proper authority.

**NOTE**

The FMU-139B/B and FMU-152 electric tail fuzes do not require the use of an arming wire when used with Mk 122 safety switch or FZU-48 with FZU-61. Fuze safety is determined by the gag rod not extended.

2. Verify fuzes safe and arming wires/cables/pins installed.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. Position all armament switches in accordance with Table 5-1.
5. Install safety pins in latch release lever and collar of wing assemblies.
6. Install detector cover and if applicable, packing materials.
7. (As applicable) Remove arming wires, cables and lanyard from empty stations.
8. Report status of aircraft to proper authority.

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**Guided Bomb Units**

7-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 7-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 7-6).
  - b. Perform Weapon Inspection for bombs to be loaded (Paragraph 7-8).
  - c. Load bombs according to Weapon Loading procedures (Paragraph 7-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 7-6).
  - b. Perform Weapons Inspection (Paragraph 7-8).
4. Perform Postloading Inspection (Paragraph 7-13).
5. Perform Prior to Launch procedures (Paragraph 7-15).

**7-26. WEAPON UNLOADING.**

7-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.

<b>WARNING</b>
----------------

(MAU-169, except MAU-169H/B) If thermal battery is inadvertently ignited, the hot gas generator will emit extremely high temperature high pressure non-toxic exhaust gases. Avoid breathing vented gases. If possible, allow heated components to cool before handling. If required, weapon may be downloaded and moved to a safe area for 90 minutes from time of activation. Use added care and wear personnel protection (gloves) when handling.

(MAU-169H/B/MAU-209) If thermal battery is inadvertently ignited, the cold gas generator will fire and the GCU will become hot to the touch. Weapon should be downloaded and moved to a safe area for 90 minutes from time of activation. Use added care and wear personnel protection (gloves) when handling.

7. Install thermal battery safety wire/clip (Figure 7-1).
8. GBU-10/12/16:
  - a. Disconnect thermal battery arming cable from forward arming latch.
  - b. Disconnect Mk 122 arming safety switch/FZU-48/FZU-61 lanyard from positive arming latch/aft arming unit; tape lanyard to weapon.

**NOTE**

To aid in disconnecting the Mk 122 Fuzing Cable, cable may be disconnected as weapon is being lowered.

- c. Disconnect Mk 122 Fuzing Cable from bomb rack.
  - d. (If applicable) Disconnect MAU-182 from aft positive arm latch or aft arming unit.
9. GBU-24:
  - a. Disconnect thermal battery MAU-166 from forward arming unit.
  - b. Disconnect FZU-32B/B arming lanyard.
  - c. Disconnect fuze/safe jettison lanyard from aft arming unit.
10. Disconnect wing release arming cables from aircraft.
11. Remove fins from CCG and place in container.

**CAUTION**

Verify handling/loading equipment is configured to accept weapon being unloaded.

12. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
13. Position and secure handling/loading equipment under station to be unloaded.
14. (If applicable) Bomb truck/weapons loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with weapon tie down straps.
15. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install hoisting band and trolleys on weapon.
  - b. Operate hoist until hoist is supporting weapon.
  - c. Position one person at nose and one person at tail of weapon to steady and guide weapon onto weapon handling equipment.

7-28. **BRU-32 RACK UNLOADING.** Unload bomb rack as follows:

**CAUTION**

Do not use detector for handling.

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.

**CAUTION**

If disconnecting Mk 122 fuzing cable while lowering weapon, do not allow weight of weapon to disconnect fuzing cable.

**NOTE**

If disconnecting Mk 122 fuzing cable while lowering weapon, stop lowering weapon approximately 4 inches below bomb rack; disconnect fuzing cable then continue lowering weapon.

- c. Lower bomb truck/weapon loader.

**CAUTION**

Do not use detector for handling.

2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.

**CAUTION**

If disconnecting Mk 122 fuzing cable while lowering weapon, do not allow weight of weapon to disconnect fuzing cable.

**NOTE**

If disconnecting Mk 122 fuzing cable while lowering weapon, stop lowering weapon approximately 4 inches below bomb rack; disconnect fuzing cable then continue lowering weapon.

- c. Operate hoist to lower weapon onto handling equipment.
  - d. Secure weapon to handling equipment with weapon tie down straps.
3. Remove handling/loading equipment with weapon from under aircraft.
4. Install cartridge retainers and auxiliary cartridge caps.
5. Set proper code inputs in Weapons Insertion Panel as required (Paragraph 5-21).
6. Secure access doors and panels.
7. (If applicable) Remove/stow WEAPON LOADED sign.
8. Remove weapon and handling/loading equipment from area.



**SECTION VIII**  
**GBU-31, GBU-32, GBU-35 SERIES**

**8-1. INTRODUCTION.**

8-2. This section contains loading and unloading information for the GBU-31, -32, -35 series (JDAM). Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV, and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

GBU-31(V)2/B Built on a Mk 84  
GBU-31(V)4/B Built on a BLU-109  
GBU-32(V)2/B Built on a Mk 83  
GBU-35(V)1/B Built on a BLU-110

**8-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

8-4. ASE authorized for loading JDAM is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

8-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None

**8-6. AIRCRAFT PREPARATION/INSPECTION.**

8-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.

**NOTE**

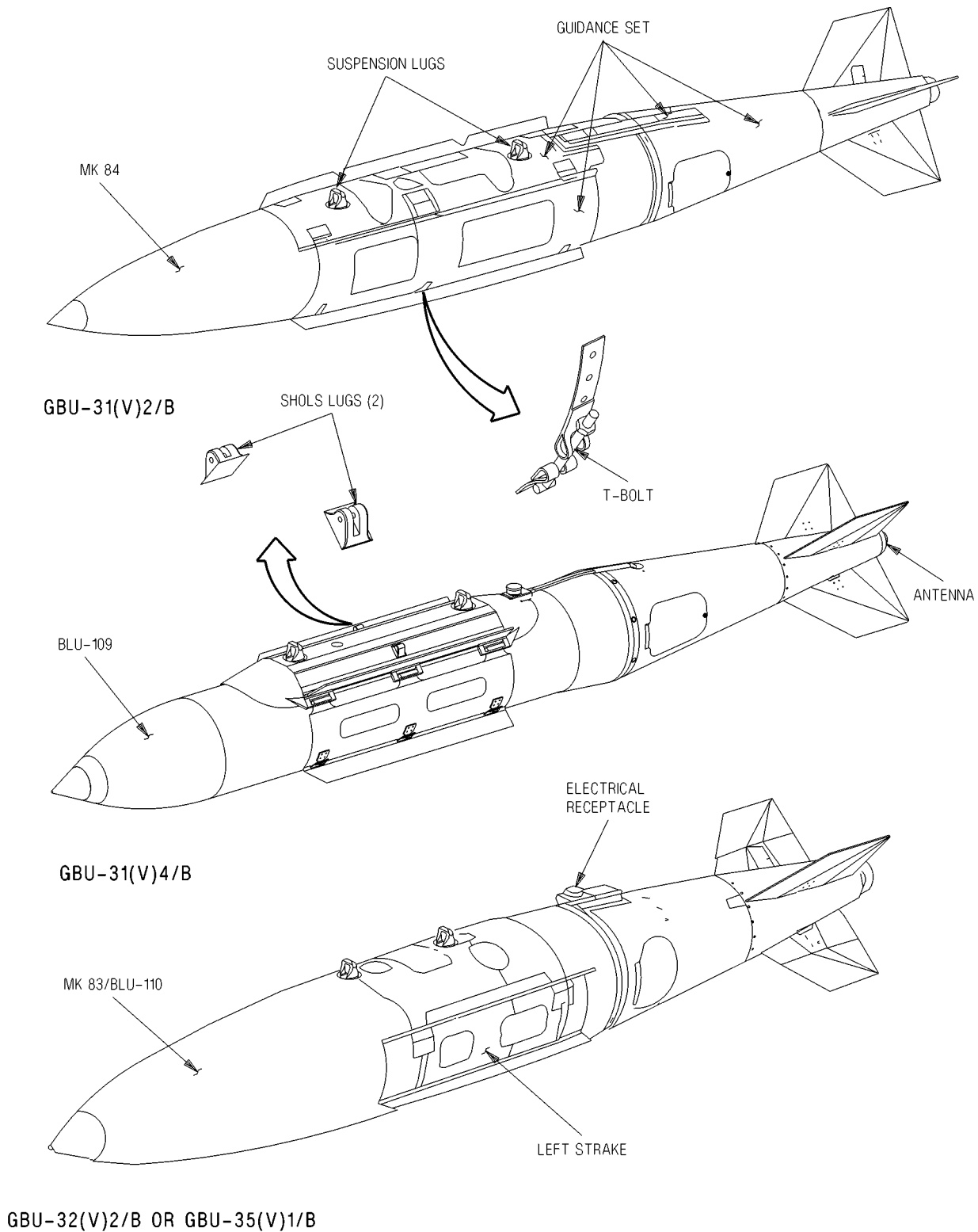
JDAM weapons use 1760 interface adapter cables. GBU-31 may use cable PN 74A756247-9AAA or PN N00421RW56247. GBU-32/35 must use cable PN N00421RW56247.

3. Verify adapter cable installed, bail connected (Figure 3-16).

**8-8. WEAPON INSPECTION.**

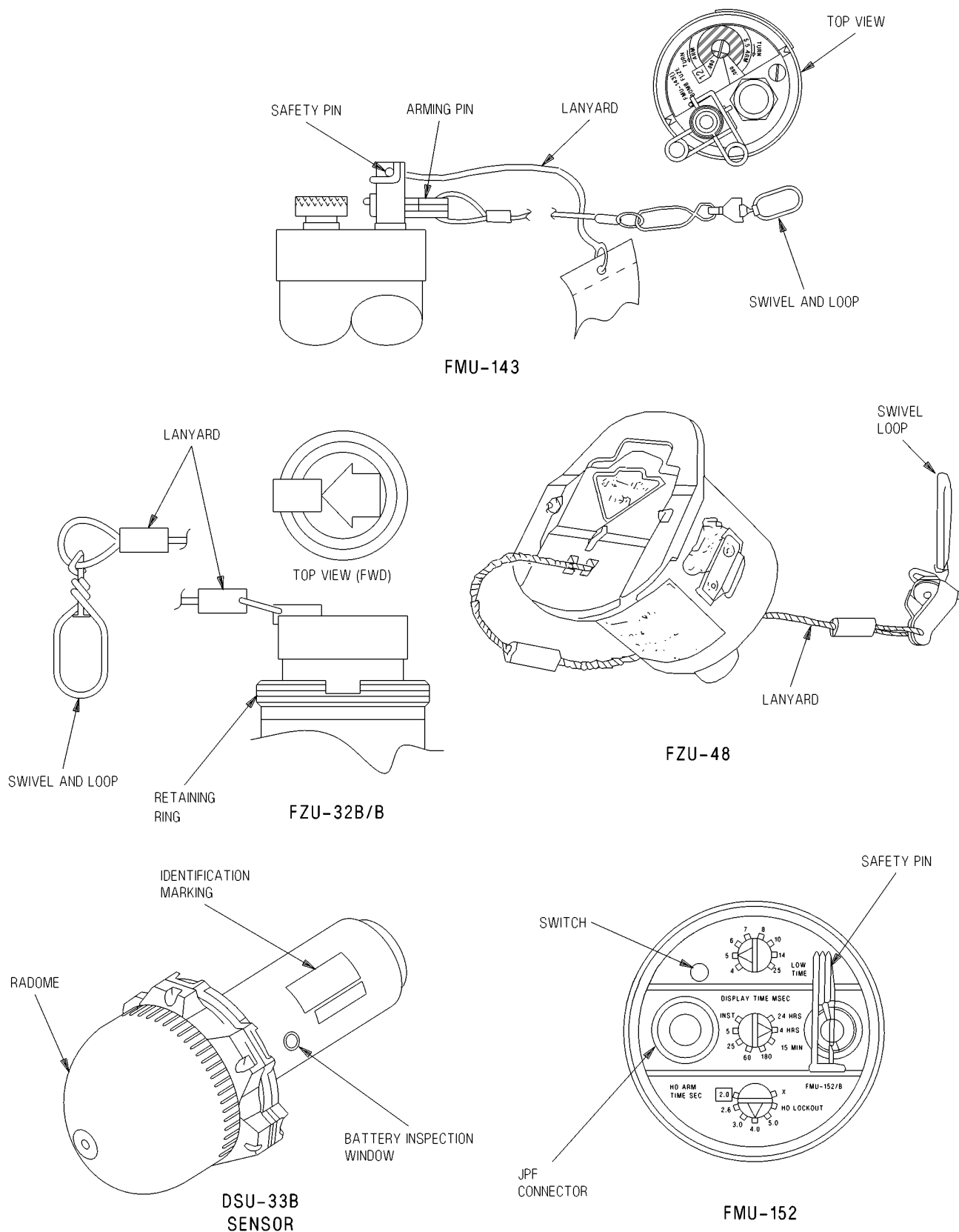
8-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows (Figures 8-1 through 8-4):

**A1-F18AE-LWS-000**  
**GBU-31, GBU-32, GBU-35 Series**



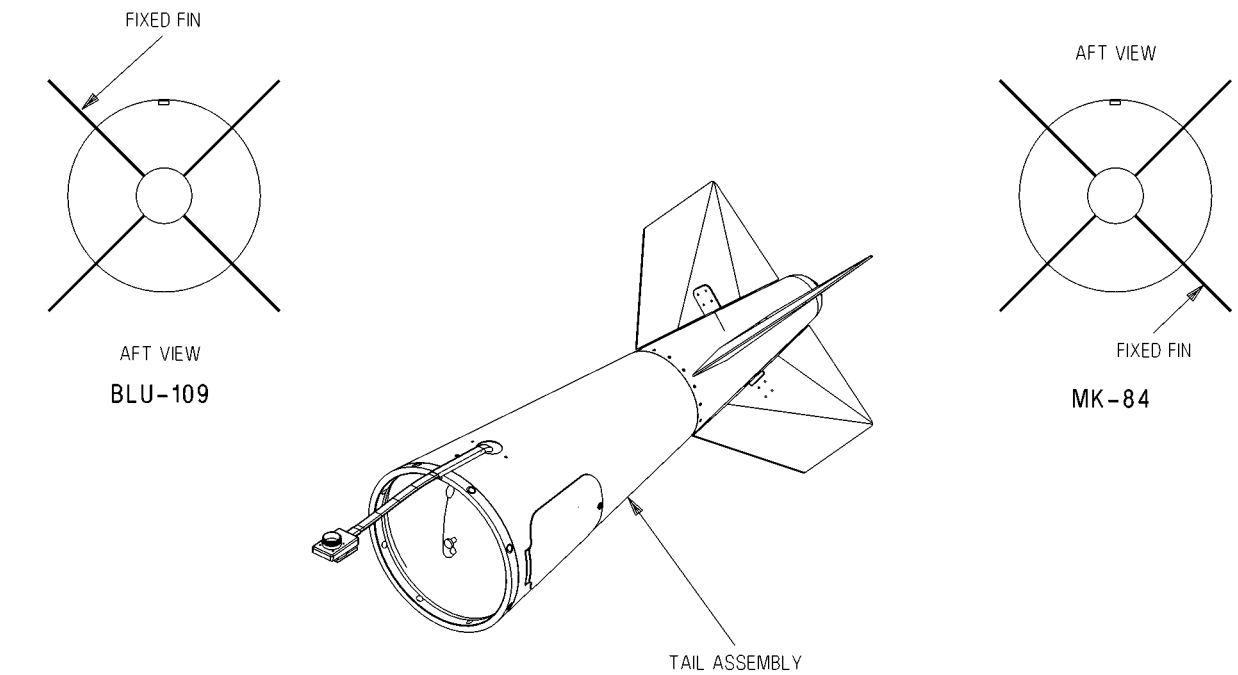
**Figure 8-1. GBU-31/32/35 Series Inspection (Sheet 1 of 3)**





**Figure 8-1. GBU-31/32/35 Series Inspection (Sheet 2 of 3)**

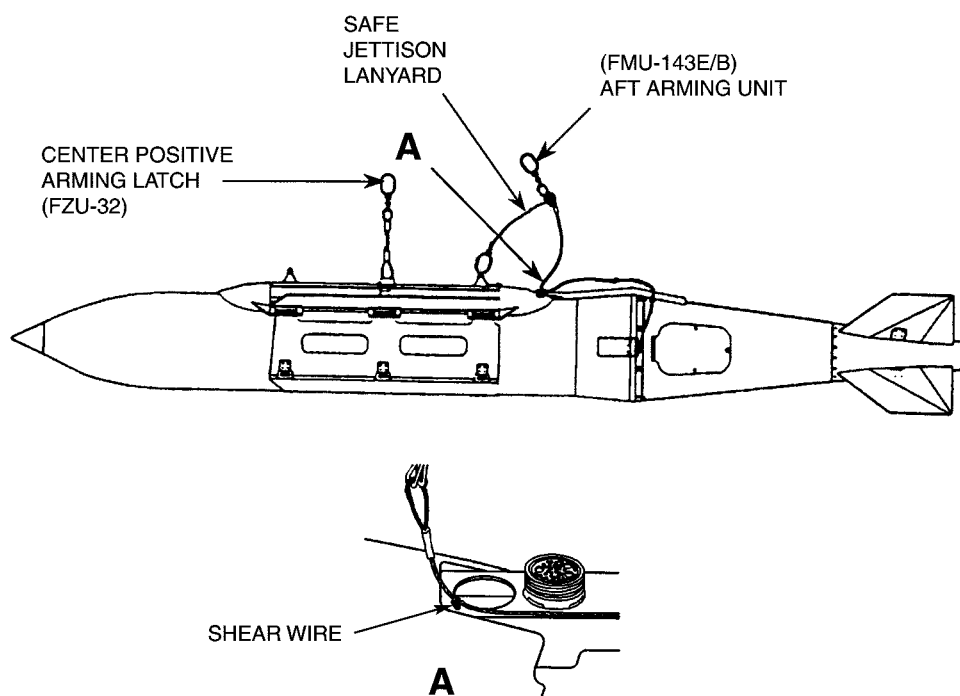
**A1-F18AE-LWS-000**  
**GBU-31, GBU-32, GBU-35 Series**



**FIN POSITION INSPECTION CRITERIA**

ACCEPT	REJECT	ACCEPT	REJECT

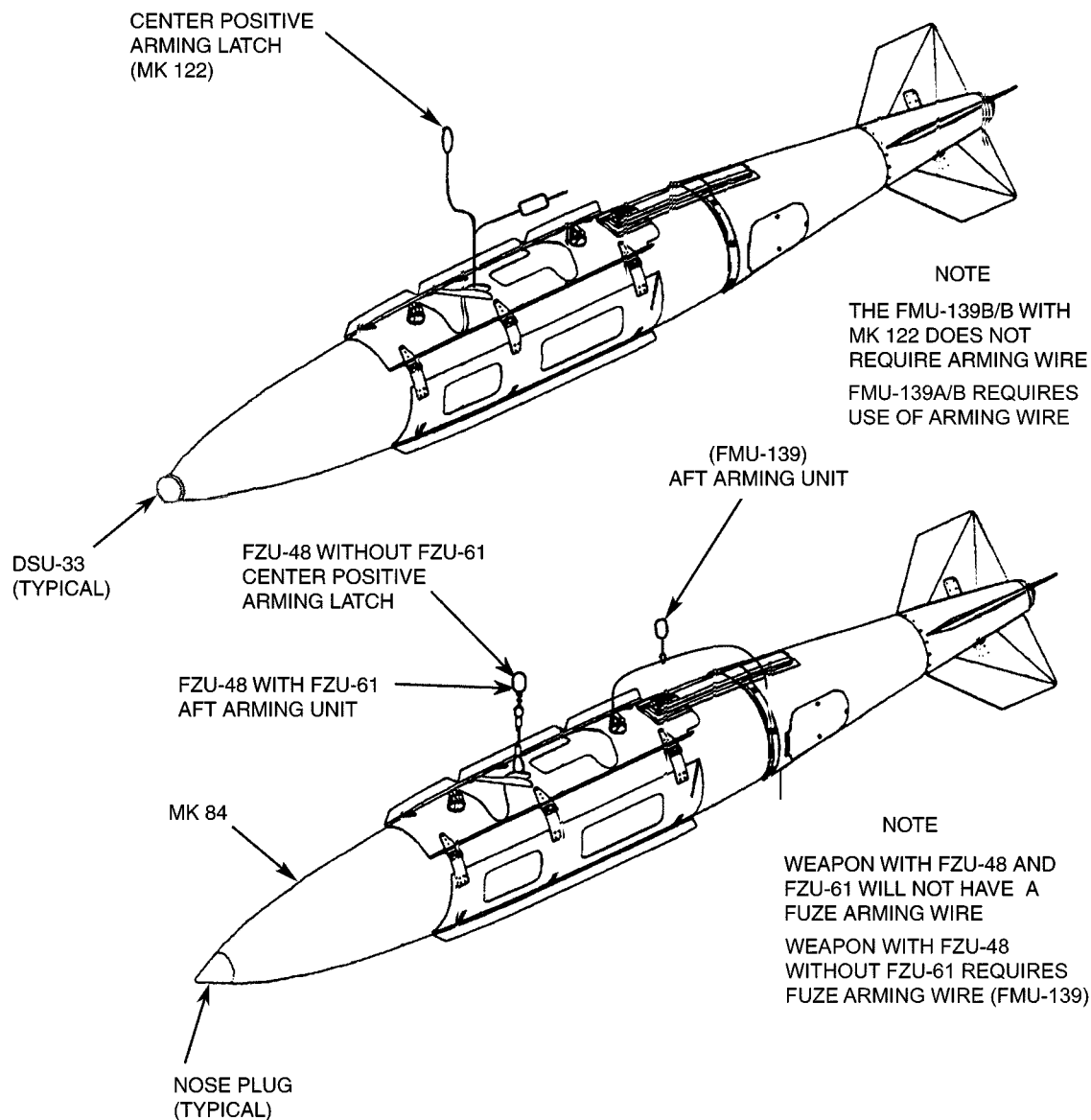
**Figure 8-1. GBU-31/32/35 Series Inspection (Sheet 3)**



ARMING WIRE/CABLE/LANYARD ROUTING	
TAIL FUZE	<ol style="list-style-type: none"> <li>1. SAFE JETTISON LANYARD ATTACHED TO AFT SUSPENSION LUG.</li> <li>2. FUZE ARMING LANYARD SHEAR WIRED TO CABLE COVER.</li> <li>3. ATTACH SAFE JETTISON LANYARD TO AFT ARMING UNIT.</li> </ol>
FZU-32	<ol style="list-style-type: none"> <li>1. ATTACH TO CENTER POSITIVE ARMING LATCH.</li> </ol>
FUZE SAFETY PIN	<ol style="list-style-type: none"> <li>1. SAFETY PIN WITH WARNING FLAG REMOVED.</li> </ol>

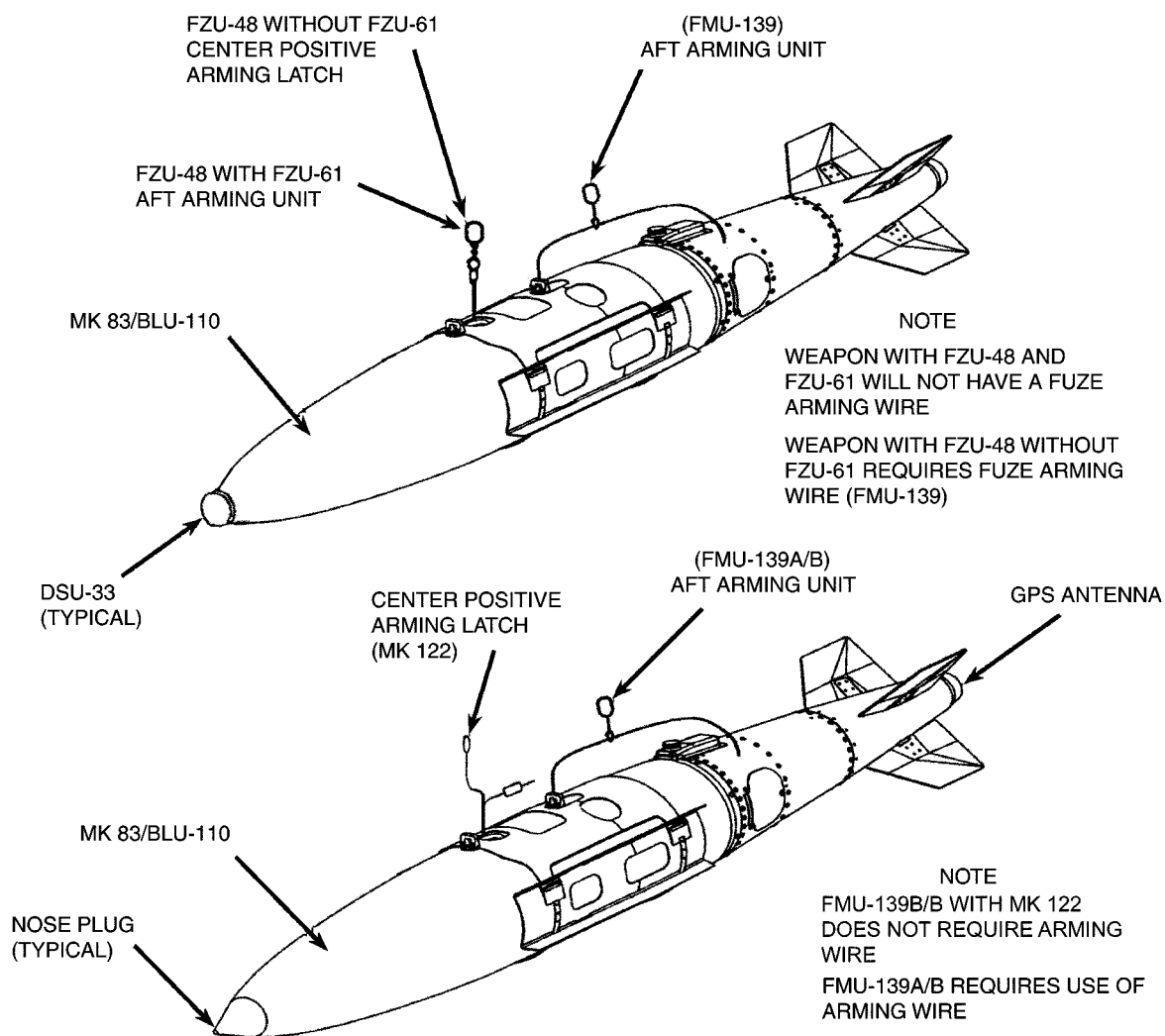
Figure 8-2. GBU-31(V)4B Inspection and Arming Wire Routing

**A1-F18AE-LWS-000**  
**GBU-31, GBU-32, GBU-35 Series**



ARMING WIRE/LANYARD ROUTING		
TAIL FUZE	MK 122	<ol style="list-style-type: none"> <li>1. NO FUZE ARMING WIRE INSTALLED.</li> <li>2. (MK 122) ATTACH LANYARD TO CENTER POSITIVE ARMING LATCH.</li> </ol>
	FZU-48 WITHOUT FZU-61	<ol style="list-style-type: none"> <li>1. FUZE ARMING WIRE ATTACHED TO AFT LUGS THROUGH MAU-182, HOLE IN TAIL SECTION, FUZE GAG ROD, AND EXITS BOTTOM OF TAIL SECTION.</li> <li>2. ATTACH MAU-182 TO AFT ARMING UNIT.</li> <li>3. CUT ARMING WIRE APPROXIMATELY 6 INCHES BELOW TAIL SECTION.</li> <li>4. (FZU-48) ATTACH LANYARD TO CENTER POSITIVE ARMING LATCH.</li> </ol>
	FZU-48 WITH FZU-61	<ol style="list-style-type: none"> <li>1. NO FUZE ARMING WIRE INSTALLED.</li> <li>2. (FZU-61) LANYARD EXTENSION ATTACHED TO FZU-48.</li> <li>3. (FZU-61) ATTACH LANYARD TO AFT ARMING UNIT.</li> </ol>
	FUZE SAFETY PIN	<ol style="list-style-type: none"> <li>1. SAFETY PIN WITH WARNING FLAG REMOVED.</li> </ol>

**Figure 8-3. GBU-31(V)2B Inspection and Arming Wire Routing**



ARMING WIRE/LANYARD ROUTING		
TAIL FUZE	MK 122	<ol style="list-style-type: none"> <li>1. NO FUZE ARMING WIRE INSTALLED.</li> <li>2. (MK 122) ATTACH LANYARD TO CENTER POSITIVE ARMING LATCH.</li> </ol>
	FZU-48 WITHOUT FZU-61	<ol style="list-style-type: none"> <li>1. FUZE ARMING WIRE ATTACHED TO AFT LUGS THROUGH MAU-182, HOLE IN TAIL SECTION, FUZE GAG ROD, AND EXITS BOTTOM OF TAIL SECTION.</li> <li>2. ATTACH MAU-182 TO AFT ARMING UNIT.</li> <li>3. CUT ARMING WIRE APPROXIMATELY 6 INCHES BELOW TAIL SECTION.</li> <li>4. (FZU-48) ATTACH LANYARD TO CENTER POSITIVE ARMING LATCH.</li> </ol>
	FZU-48 WITH FZU-61	<ol style="list-style-type: none"> <li>1. NO FUZE ARMING WIRE INSTALLED.</li> <li>2. (FZU-61) LANYARD EXTENSION ATTACHED TO FZU-48.</li> <li>3. (FZU-61) ATTACH LANYARD TO AFT ARMING UNIT.</li> </ol>
	FUZE SAFETY PIN	<ol style="list-style-type: none"> <li>1. SAFETY PIN WITH WARNING FLAG REMOVED.</li> </ol>

Figure 8-4. GBU-32/35 Inspection and Arming Wire Routing

**GBU-31, GBU-32, GBU-35 Series**

1. Ensure weapon is properly assembled and not damaged.
2. Ensure suspension lugs are installed and properly adjusted.
  - a. (GBU-31(V)4/B) Both lugs adjusted so the crown of the lug is flush with the upper hardback surface or the top of the lug sleeve, whichever is higher.
  - b. (GBU-31(V)2/B, GBU-32/35) Forward lug, aft shoulder flush with the surface of the bomb body; aft lug, forward shoulder flush with the surface of the bomb body.
3. (GBU-31(V)4/B) Verify SHOLS lugs installed.
4. (GBU-31/32/35) Inspect as follows (Figures 8-1 through 8-4):
  - a. Verify strakes are secure, not damaged, angled edge forward.
  - b. Verify the Guidance/Tail Assembly is secure and not damaged.
    - (1) Verify electrical umbilical receptacle is clean and not damaged.
    - (2) (GBU-31) Verify the electrical receptacle is installed in the aft hole of the cable cover.

**WARNING**

(GBU-31 with KMU-556/B or KMU-558/B Tail Assembly) If any of the three moveable fins are outside the fin indicator markings, the weapon shall be rejected.

(GBU-31 with KMU-556/B or KMU-558/B Tail Assembly) If one or more fin indicator markings are missing the weapon shall be rejected.

**NOTE**

There are no markings on the fixed fin. Later model tail assemblies (KMU-556A/B, 558A/B, and 559A/B) have a pin lock system and will not have fin indicator markings.

- (3) (KMU-556/B or KMU-558/B) Verify fins are within the boundaries of the fin indicator markings (Figure 8-1).
- (4) Verify the GPS antenna is not damaged (Figure 8-1).
- c. (GBU-31(V)2/B, GBU-32/35) with FMU-139 fuzing system:
  - (1) (FZU-48) Verify the arrow on cover points forward, and upper strake does not interfere with cover.

**NOTE**

The FMU-139 Series Fuze requires the use of an arming wire if FZU-48 is used without the FZU-61.

The FMU-139A/B Fuze requires the use of an arming wire if Mk 122 safety switch is used.

The FMU-139B/B Fuze does not require the use of an arming wire if using Mk 122 safety switch or if FZU-48 is used with FZU-61.

(2) (As applicable) Mk 3 arming wrapped around aft lug, through a MAU-182 swivel, routed alongside the cable cover, into tail assembly, through 2 Fahnestock clips above the pop-out pin (gag-rod), through pop-out pin, and out the bottom of the tail.

(3) (FZU-48 with FZU-61) FZU-61 lanyard extension attached to FZU-48; lanyard taped to weapon; fuze arming wire not required.

d. (GBU-31(V)4/B) with FMU-143 fuze:

(1) (FZU-32) Verify installed with the arrow pointing forward.

(2) Fuze arming pin installed and safety pin removed.

(3) Verify fuze arming cable is shear wired to the cable cover.

(4) Verify SAFE jettison lanyard properly installed.

e. (FMU-152) Verify fuze electrically connected to tail assembly JPF cable and connector.

**NOTE**

If Mk 122 safety switch cable is damaged, or the lanyard has been pulled, the entire Mk 122 assembly must be replaced. The restrictions of Paragraph 5-42 must be complied with.

f. (As applicable) Ensure Mk 122 safety switch is installed (cable aft).

g. Ensure fuze safety (cutter) pin(s) and warning tag(s) are removed.

**WARNING**

(GBU-31(V)2/B, GBU-32/35) using the FMU-139 fuzing system with FZU-48 must have the low drag arm time set to other than "X".

h. Verify fuze is set in accordance with data marked on the tail.

i. (DSU-33 installed) Inspect DSU-33 proximity sensor (Figure 8-1) as follows:

- (1) Verify the radome is not cracked or damaged.

**CAUTION**

Ensure that no more than 1/4 inch clearance exists between the DSU-33 proximity sensor and the bomb body.

- (2) Verify 1/4 inch or less clearance between sensor and nose of bomb body; setscrew seated.

j. (DSU-33 not installed) Inspect DSU-33 proximity sensor (Figure 8-1) and bomb nose fuze well as follows:

**CAUTION**

The battery paint band, when viewed through the inspection window, will appear a light color (e.g., white or light gray) if battery has not been activated. The paint band will appear a dark color (e.g., black or dark gray) if activation has occurred.

- (1) (DSU-33) Ensure battery pain band is not dark.

**NOTE**

Minor damage to DSU-33 body by bomb nose set screw is acceptable.

- (2) (DSU-33) Ensure radome, threads and other external surfaces are clean and not damaged.
- (3) Bomb nose fuze cavity clean and not damaged; set screw retracted.

**8-10. WEAPON LOADING.**

8-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify that Aircraft Preparation/Inspection (Paragraph 8-6) and Weapon Inspection (Paragraph 8-8) have been completed.

2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. 161353 thru 165206: Position PP-6419 power supply 115 VAC circuit breaker to ON.
5. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
6. Position handling/loading equipment with weapon under station to be loaded and secure.

8-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:



<b>CAUTION</b>
----------------

Observe SATS loader fork placement carefully to avoid damage to weapon strakes.

**NOTE**

To aid connecting the Mk 122 fuzing cable, cable may be connected as weapon is being raised. Stop raising weapon approximately 4 inches below bomb rack. Connect fuzing cable, then continue raising weapon.

If Mk 122 arming safety switch lanyard is pulled during loading, refer to Paragraph 5-42 for replacement criteria.

If FZU-32 or FZU-48 lanyard is pulled, opening the intake, the weapon must be rejected.

- a. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-33).
2. (If applicable) Bomb hoist loading (Paragraph 5-33).
  - a. (GBU-31(V)2B, GBU-32/35) Install hoisting band and single stores trolleys on the weapon and aircraft.
  - b. (GBU-31(V)4B) Install HLK-217 and HLK-218 trolleys to SHOLS lugs installed in the hardback assembly.
  - c. Operate hoist to remove slack from the cable.
  - d. Position one person at the nose and one person at the tail of weapon to steady while hoisting.
  - e. Remove weapon tiedown straps securing weapon to handling equipment.
  - f. Ensure loop of Mk 3 arming wire is positioned on the left side of aft bomb suspension lug.

**NOTE**

To aid connecting the Mk 122 fuzing cable, cable may be connected as weapon is being raised. Stop raising weapon approximately 4 inches below bomb rack. Connect fuzing cable, then continue raising weapon.

If Mk 122 arming safety switch lanyard is pulled during loading, refer to Paragraph 5-42 for replacement criteria.

If FZU-32 or FZU-48 lanyard is pulled, opening the intake, the weapon must be rejected.

- g. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- h. Visually inspect rack indicates LOCKED (Paragraph 5-6).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

3. (As applicable) Ease hoist or lower bomb truck/weapon loader until weapon weight is supported by rack suspension hooks.
4. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
5. Rotate ground safety handle to the LOCKED position.
6. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.
7. (DSU-33) (If applicable) Install DSU-33 sensor as follows:
  - a. Ensure bomb nose fuze well is clean and set screw retracted.

**NOTE**

DSU-33 sensor may not fit flush with fuze well. Approximately 1/4-inch gap between sensor and bomb nose is acceptable.

- b. Screw sensor into nose fuze well hand tight.
  - c. Tighten nose set screw as follows:
    - (1) (Preferred) Install sensor in nose fuze well hand tight and tighten nose set screw to 30-35 in-lbs torque after set screw contacts DSU-33.
    - (2) (Alternate) Install sensor in nose fuze well hand tight and tighten set screw 1/2 to one turn after set screw contacts DSU-33.
8. (GBU-31/32/35) Attach/connect arming wires/lanyards as follows (Figures 8-2 through 8-4):
  - a. (Mk 122) Electrically connect and attach lanyard to center positive arming latch.
  - b. (FZU-32 or FZU-48 without FZU-61) Attach lanyard to center positive arming latch.
  - c. (FZU-48 with FZU-61) Attach FZU-61 to aft arming unit.
  - d. (FMU-143) Attach Safe Jettison/Fuze arming cable to aft arming unit.
  - e. (FMU-139) (If applicable) Attach MAU-182 to aft arming unit.
  - f. Connect adapter cable to weapon connector.
  - g. (As required) Perform weapon inventory/BIT check (Paragraph 5-39).

9. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
10. Place WEAPON LOADED sign in cockpit.
11. Remove tools and handling/loading equipment from area.

### **8-13. POSTLOADING INSPECTION.**

8-14. Perform Postloading Inspection for weapons loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
5. Verify suspension hooks open on unloaded stations.
6. Swaybraces properly seated.
7. Inspect GBU's as follows:
  - a. (DSU-33) Sensor installed; bomb nose set screw tight.
  - b. (As applicable) Arming wire/arming cable properly installed and attached.
  - c. (If applicable) Mk122 arming safety switch lanyard attached to center positive arming latch.
  - d. (If applicable) Mk 122 fuzing cable fully seated in bomb rack receptacle.
  - e. (If applicable) FZU-32 or FZU-48 without FZU-61 lanyard attached to center positive arming latch.
  - f. (If applicable) FZU-48 with FZU-61, lanyard attached to aft arming unit.
  - g. (As applicable) Safe Jettison/Fuze arming cable attached to aft arming unit.

<b>WARNING</b>
----------------

(GBU-31(V)2/B, GBU-32/35) using the USAF FMU-139A/B fuzing system with FZU-48/B must have the low drag arm time set to other than "X".

- h. Fuse set in accordance with fuze data on tail.
  - i. (FMU-152) Electrically connected to tail.
- 8. (If applicable) Inventory/BIT check performed.
- 9. Proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
- 10. Tools and handling/loading equipment removed from area.
- 11. Report status of aircraft to proper authority.

**8-15. PRIOR TO LAUNCH.**

8-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

8-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

- 1. Remove/stow WEAPON LOADED sign.
- 2. Secure access doors and panels.

8-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed in the rearming area.

8-19. **ARMING AREA.** There are no procedures to be performed in the arming area.

**8-20. AFTER LANDING OR GROUND ABORT.**

8-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

8-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

8-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed in the dearming area before engine shutdown.

8-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

- 1. Ensure ground safety handles in LOCKED position on all loaded stations.

**WARNING**

If weapon has received an intent-to-launch (ITL), the battery will have been activated (battery fired). The skin of the tail assembly will be hot to the touch for up to 30 minutes from time ITL initiated. Use care when handling.

If any component is missing, loose, or damaged notify proper authority.

Do not attempt to dearm a partially or fully armed fuze. Notify proper authority.

If an arming wire is not installed in fuze, the fuze may be armed. Notify proper authority.

**NOTE**

The only means of determining the safe condition of electric fuzes is by verifying the arming pin is installed (FMU-143) or gag rod not extended (FMU-139/152).

2. Ensure fuzes safe and, as applicable, arming wires/cables/pins installed.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
  4. Position all armament switches in accordance with Table 5-1.
  5. (As applicable) Remove arming wires, cables or lanyards from empty stations.
  6. Report status of aircraft to proper authority.
- 8-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.
1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 8-20).
  2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
    - a. Perform applicable Aircraft Preparation/Inspection (Paragraph 8-6).
    - b. Perform applicable Weapon Inspection for weapons to be turned around or loaded (Paragraph 8-8).
    - c. (If applicable) Load weapons according to Weapon Loading procedures (Paragraph 8-10).
  3. For aircraft recovered with loaded stations perform the following:
    - a. Perform applicable portions of Aircraft/Inspection (Paragraph 8-6).

- b. Perform applicable Weapon Inspection (Paragraph 8-8).
4. Perform Postloading Inspection (Paragraph 8-13).
5. Perform Prior to Launch procedures (Paragraph 8-15).

**8-26. WEAPON UNLOADING.**

8-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Ensure power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Ensure ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. (Mk 122) Disconnect arming safety switch lanyard tab from positive arming latch.

**NOTE**

(Mk 122) To aid in disconnecting fuze cable, cable may be disconnected as weapon is being lowered.

8. (Mk 122) Disconnect fuze cable from bomb rack.
9. (FZU-32/48/61) Disconnect arming lanyard; tape lanyard to weapon.
10. Disconnect umbilical cable, install covers.
11. Disconnect arming wires, cables, and lanyards from aircraft.
12. (If applicable) DSU-33:
  - a. Retract bomb nose set screw.
  - b. Remove DSU-33.

**CAUTION**

Ensure handling/loading equipment is configured to accept weapon being unloaded.

13. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).

14. Position and secure handling/loading equipment under station to be unloaded.
15. (If applicable) Bomb truck/weapons loader unloading:

<b>CAUTION</b>
----------------

Observe SATS loader fork placement carefully to avoid damage to weapon strakes.

- a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with weapon tiedown straps.
16. (If applicable) Bomb hoist unloading (Paragraph 5-33):
    - a. (As applicable) Install hoisting band.
    - b. Install single stores trolleys on hoisting band/hard back assembly.
    - c. Operate hoist until hoist is supporting weapon.
    - d. Position one person at nose and one person at tail of weapon to steady, and guide weapon onto weapon handling equipment.

**8-28. BRU-32 RACK UNLOADING.** Unload bomb rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.

<b>CAUTION</b>
----------------

(Mk 122) If disconnecting fuzing cable while lowering weapon, do not allow weight of weapon to disconnect fuzing cable.

**NOTE**

(Mk 122) If disconnecting fuzing cable while lowering weapon, stop lowering weapon approximately 4 inches below bomb rack. Disconnect fuzing cable, then continue lowering weapon.

- c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:
    - a. Rotate ground safety handle to UNLOCKED.
    - b. Rotate MANUAL RELEASE to open suspension hooks.

<b>CAUTION</b>
----------------

(Mk 122) If disconnecting fuzing cable while lowering weapon, do not allow weight of weapon to disconnect fuzing cable.

**NOTE**

(Mk 122) If disconnecting fuzing cable while lowering weapon, stop lowering weapon approximately 4 inches below bomb rack. Disconnect fuzing cable, then continue lowering weapon.

- c. Operate hoist to lower weapon onto handling equipment.
- d. Secure weapon to handling equipment with weapon tiedown straps.

<b>CAUTION</b>
----------------

If weapon has received an intent-to-launch, the weapon must be marked “BATTERY FIRED” and weapon rejected for use.

- 3. (ITL initiated) Mark tail section “BATTERY FIRED”.
- 4. Remove handling/loading equipment with weapon from under aircraft.
- 5. Install cartridge retainers and auxiliary cartridge caps.
- 6. Set proper code inputs in Weapons Insertion Panel as required (Paragraph 5-21).
- 7. Secure access doors and panels.
- 8. (If applicable) Remove/stow WEAPON LOADED sign.
- 9. Remove weapon and handling/loading equipment from the area.



**SECTION IX**  
**CLUSTER BOMB UNITS (CBU)**

**9-1. INTRODUCTION.**

9-2. This section contains loading and unloading information for the dispensers listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks, in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

After incorporation Of Airborne Weapons Change (AWC) 372, Mk 20 Mods 11/12/9/10, are reidentified as CBU-99/B, CBU-100/B, CBU-99A/B and CBU-100A/B.

Mk 20 Mods 9, 11, 12 (Rockeye)  
CBU-99/B, CBU-99A/B  
CBU-100/B, CBU-100A/B  
CBU-78 Series (Gator)  
PDU-5/B

**9-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

9-4. ASE authorized for loading CBU weapons is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

9-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

**9-6. AIRCRAFT PREPARATION/INSPECTION.**

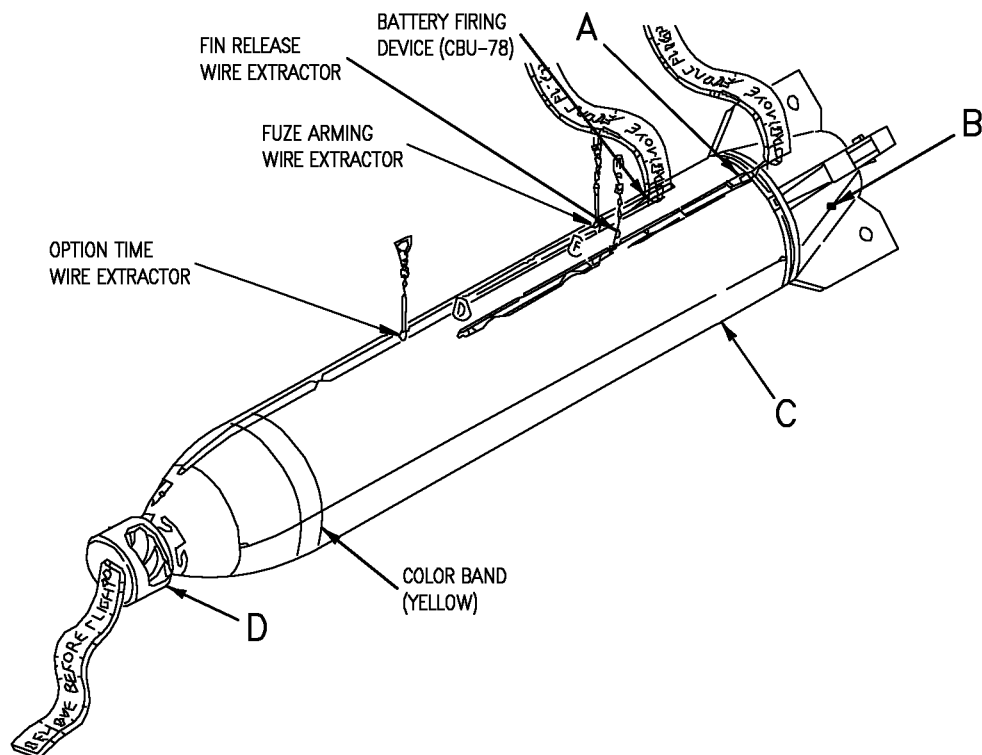
9-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. (As applicable) Verify BRU-32 swaybraces are properly seated against BRU-33.
4. (As applicable) Verify adapter cable installed (Figures 3-5 and 3-6).

**9-8. WEAPON INSPECTION.**

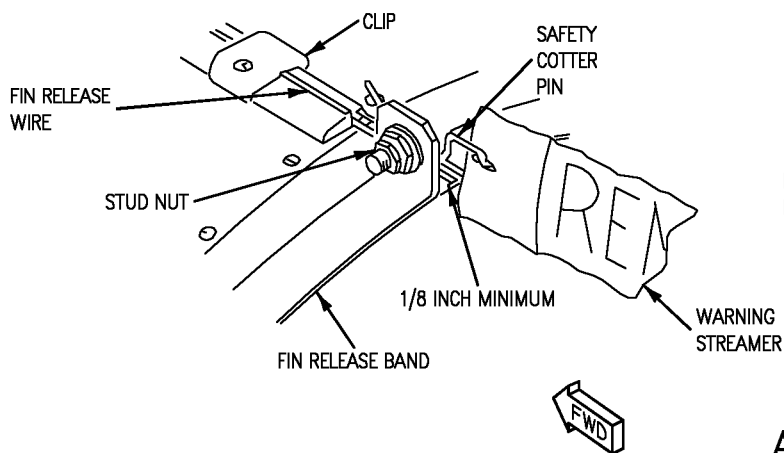
9-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapon for loading as follows (Figures 9-1, 9-2 and 9-3):

**A1-F18AE-LWS-000**  
**Cluster Bomb Units**



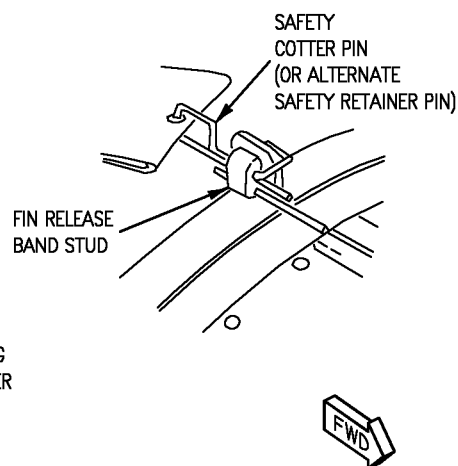
**NOTE**

ARMING WIRE MUST PROTRUDE A MINIMUM OF 1/8-INCH BEYOND THE STUD TO PREVENT ARMING WIRE FROM FALLING FREE DURING HANDLING OR WHILE IN FLIGHT BEFORE WEAPON RELEASE.

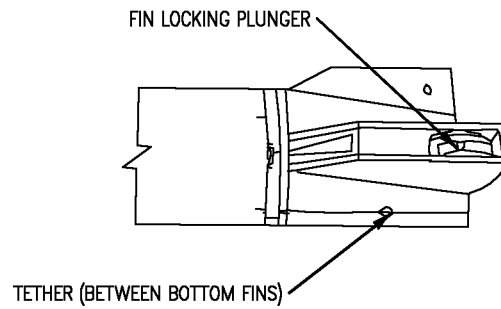


**NOTE**

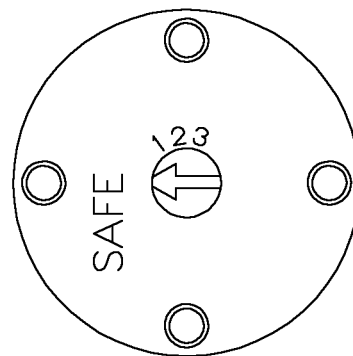
SAFETY COTTER PIN EXTENDED PRONG MUST BE BENT 15 TO 30 DEGREES FROM SHORT PRONG.



**Figure 9-1. Mk 20, CBU-78, CBU-99/CBU-100 and PDU-5/B Inspection**  
**(Sheet 1 of 2)**

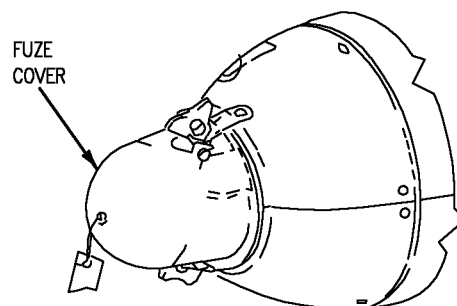


B



SD SELECTOR SWITCH  
(CBU-78)

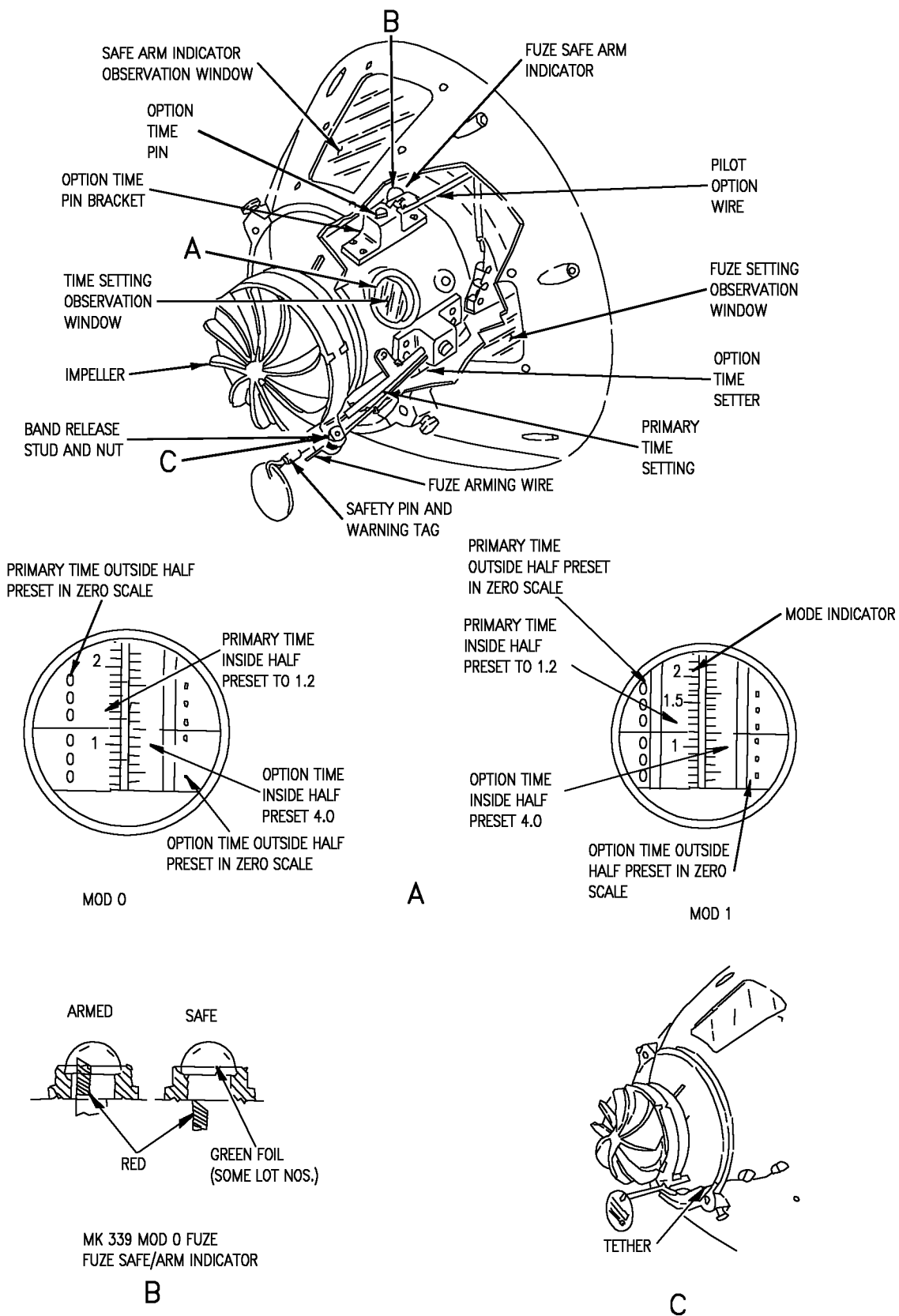
C



D

Figure 9-1. Mk 20, CBU-78, CBU-99/CBU-100 and PDU-5/B Inspection  
(Sheet 2)

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**Cluster Bomb Units**



**Figure 9-2. Mk 339/FMU-140 Fuze Inspection (Sheet 1 of 2)**

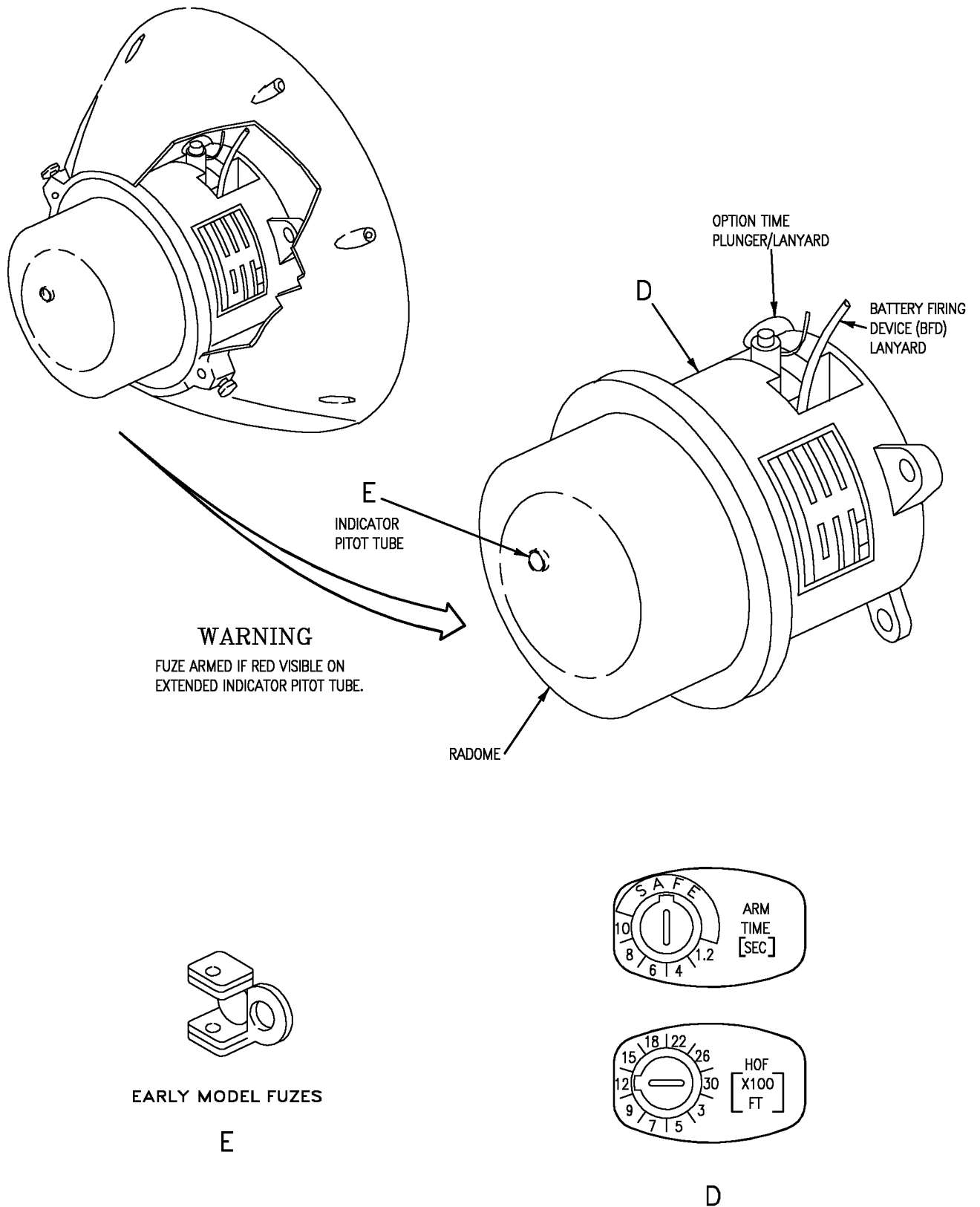


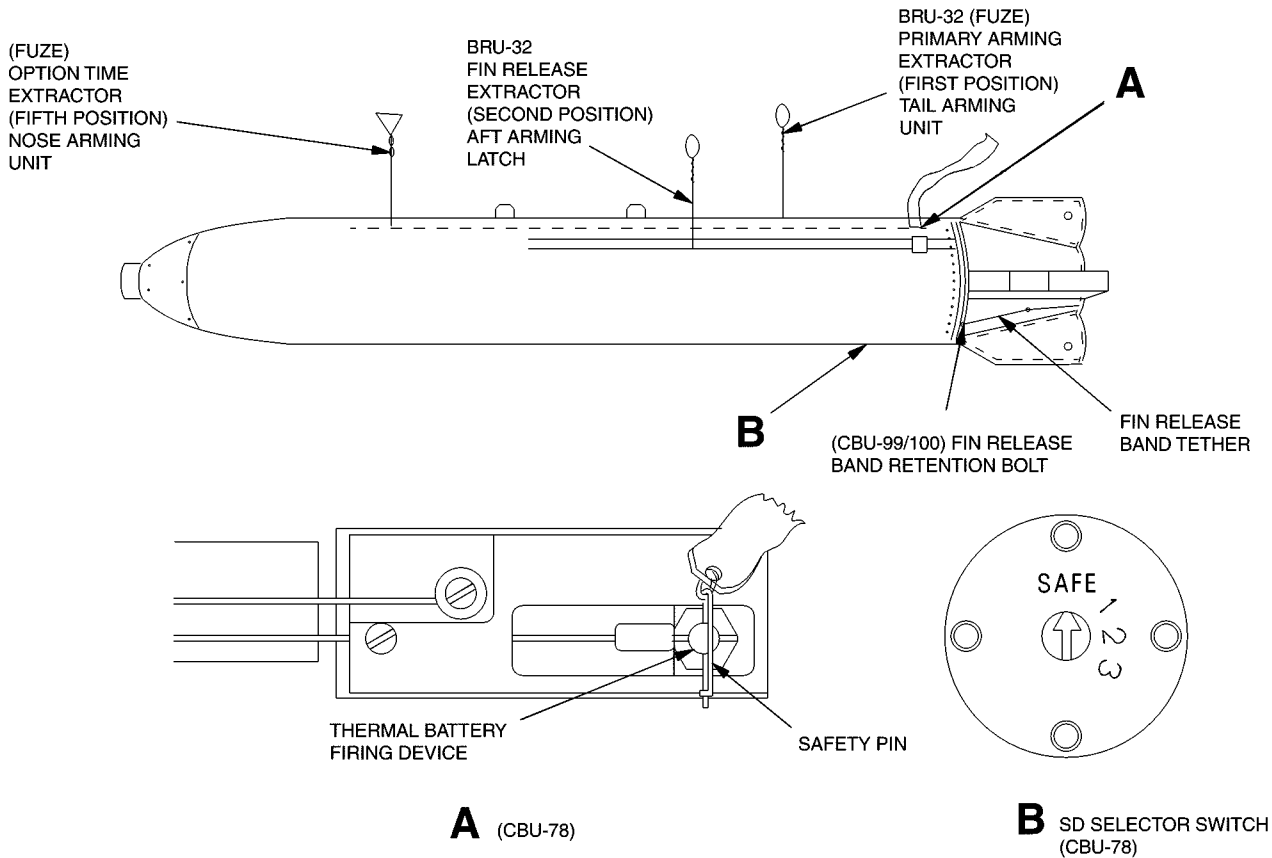
Figure 9-2. Mk 339/FMU-140 Fuze Inspection (Sheet 2)

**NOTE**

EXTRACTOR POSITIONS ARE LOCATED BY COUNTING FROM AFT END OF WEAPON.

MK 20 MODS 11/12 ON BRU-33 A/A:

PLACE FUZE (PRIMARY) EXTRACTOR TO THE SECOND POSITION AND CONNECT TO TAIL ARMING UNIT. PLACE FIN EXTRACTOR TO THE THIRD POSITION AND CONNECT TO CENTER POSITIVE ARM LATCH.



EXTRACTOR ROUTING	
NOSE FUZE	<ol style="list-style-type: none"> <li>1. CONNECT PRIMARY ARMING WIRE EXTRACTOR TO TAIL ARMING UNIT.</li> </ol> <p>NOTE</p> <p>IF FUZE OPTION MODE IS NOT TO BE USED. REMOVE OPTION TIME ARMING WIRE EXTRACTOR AND RETAIN.</p> <ol style="list-style-type: none"> <li>2. (IF APPLICABLE) CONNECT OPTION TIME ARMING WIRE EXTRACTOR TO NOSE ARMING UNIT.</li> </ol>
FIN RELEASE	<ol style="list-style-type: none"> <li>1. (BRU-32) CONNECT FIN RELEASE WIRE EXTRACTOR TO AFT ARMING LATCH.</li> <li>2. (BRU-33) CONNECT FIN RELEASE WIRE EXTRACTOR TO CENTER POSITIVE ARMING LATCH.</li> </ol>
THERMAL BATTERY FIRING DEVICE	<ol style="list-style-type: none"> <li>1. REMOVE THERMAL BATTERY FIRING DEVICE SAFETY PIN.</li> <li>2. SET SD SELECTOR SWITCH AS DIRECTED.</li> </ol>
FUZE/FIN RELEASE BAND SAFETY PINS	<ol style="list-style-type: none"> <li>1. REMOVE AFTER EXTRACTORS ARE CONNECTED.</li> </ol>

**Figure 9-3. Mk 20, CBU-99, CBU-100, CBU-78/B, and PDU-5/B Extractor Routing**

**WARNING**

(Mk 339) If fuze ARM/SAFE indicator indicates armed or partially armed condition, reject dispenser and notify proper authority.

The Mk 339 is a time fuze. If unsafe indications are noted, timer may be running or fuze may be armed. Keep area clear and notify proper authority.

(FMU-140) If weapon fuze SAFE/ARM indicator indicates armed or partially armed condition, reject weapon and notify proper authority. The FMU-140/B is a proximity nose fuze.

(FMU-140) The fuze is to be considered armed if red is visible on the extended indicator pitot tube.

**NOTE**

(Mk 339) Some early model fuzes do not contain a green disc in the plastic bubble. With these fuzes in the safe condition, the red tip of the ARM/SAFE indicator may be visible but will not protrude into the bubble. However, in the armed condition, the red ARM/SAFE indicator will protrude into the bubble and will be clearly visible from any angle.

1. Inspect Mk 339 and FMU-140 ARM/SAFE indicator as follows:
  - a. Red tip of the ARM/SAFE indicator does not protrude through green disc/radome or does not protrude past fuze housing into plastic bubble on side of fuze.
2. (If applicable) Remove fuze protective cover, inspect fuze for damage and verify the following:
  - a. Mk 339 Fuze:
    - (1) Safety pin is installed in band release stud and timer starting pin.
    - (2) Arming wire is installed in fuze band release stud and timer starting pin; it extends a minimum of 1/8 inch beyond fuze sealing band release stud.

**CAUTION**

If Mk 339 Mod 0 option pin has been released, fuze can be used in the option mode only. Do not attempt to reset option pin or to install option time arming wire or safety pin in the option pin.

**NOTE**

(Mk 20 Mods 11/12, CBU-99/B, CBU-100/B, and CBU-78) Primary arming wire extractor must be positioned for installation in the tail arming unit, and option time arming wire extractor must be positioned for installation in the nose arming unit. Fin release extractor is positive armed.

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(3) (Mk 20 Mods 11/12, CBU-99/B, CBU-100/B, and CBU-78 with Mk 339) Option time arming wire is installed and extends a minimum of 1/8 inch beyond option time pin bracket; safety pin is not installed.

(4) Impeller band tether installed.

(5) Fuze vane is not damaged.

(6) Desired fuze function time is set on primary and option dials.

b. FMU-140 Fuze:

(1) Arming wires installed and not damaged.

(2) Ensure desired arm time is set.

(3) Ensure desired Height of Function (HOF) is set.

3. (If applicable) Replace fuze protective cover.

**WARNING**

If weapon body is dented more than 1 inch in depth or cracked, reject weapon.

4. Inspect weapon body for damage.

5. Inspect fin assembly and verify the following:

**WARNING**

Do not remove fin release band safety pin. If fin release wire is pulled while the fin release band safety pin is not installed, the fin release band will separate allowing fins to snap open which could cause severe injury to personnel.

a. Fin release band is properly positioned in groove and fins are securely held in folded position.

b. Fin release band safety pin is installed and fin release wire extends a minimum of 1/8 inch beyond release band stud.

c. (Mk 20 Mods 9/11/12, and CBU-78/B) Fin release band tether/strap installed.

d. (CBU-99, CBU-100, CBU-78A/B, B/B, C/B, and PDU-5/B) Fin release band secured to weapon with bolt.

e. Fin locking plungers have freedom of movement. Press and release each plunger to ensure it moves freely.



- f. Fin assembly is not damaged.
6. Inspect fuze arming wire and (as applicable) fin release wire conduits for damage.

**NOTE**

Primary arming wire extractor must be positioned for installation in the tail arming unit, and option time arming wire extractor must be positioned for installation in the nose arming unit. Fin release extractor is positive armed.

7. Ensure arming and fin release wires are in place in weapon conduits and extractor tabs are installed in accordance with Figure 9-3.

8. (CBU-78/B) Inspect thermal battery firing device as follows:



If thermal battery firing device safety pin is missing and the fuze primary is pulled, the thermal battery will activate, dudding the weapon.

- a. Ensure thermal battery firing device safety pin is installed.
  - b. Ensure SD selector switch set to SAFE.
9. Ensure that suspension lugs are installed with base of lug eye flush with weapon surface and aligned.

**9-10. WEAPON LOADING.**

9-11. **BRU-32/BRU-33 RACK PREPARATION.** Prepare BRU-32/BRU-33 rack for loading as follows:

- 1. Verify that Aircraft Preparation/Inspection (Paragraph 9-6) and Weapon Inspection (Paragraph 9-8) have been completed.
- 2. Verify that aircraft is grounded.
- 3. Position all armament switches in accordance with Table 5-1.
- 4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-32).
- 5. Position handling/loading equipment with weapon under station to be loaded and secure.
- 6. (If applicable) Bomb hoist loading (Paragraph 5-33):
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.

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d. Remove weapon tiedown straps securing weapon to handling equipment.

7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

9-12. **BRU-32/BRU-33 RACK LOADING.** Load BRU-32/BRU-33 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:

- a. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-16, as applicable).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

c. Lower bomb truck/weapon loader until weapon weight is supported by bomb rack suspension hooks.

d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.

e. Rotate ground safety handle to the LOCKED position.

f. Remove weapon tiedown straps.

2. (If applicable) Bomb hoist loading:

- a. Hoist weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-16, as applicable).
- c. Ease hoist until weapon weight is supported by bomb rack suspension hooks.

d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.

e. Rotate ground safety handle to the LOCKED position.

3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.

4. Connect extractors to aircraft (Figure 9-3).

5. (CBU-78) Remove Battery Firing Device safety pin.

6. (CBU-78) Set SD selector switch as directed.

7. Remove fin release band safety pin.

8. (If applicable) Remove fuze protective cover.

9. (Mk 339) Remove safety pins from fuze band release stud and timer starting pin.
10. (As required) Perform Weapon Inventory/BIT Check (Paragraph 5-39).
11. Install cartridges in all bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
12. Place WEAPON LOADED sign in cockpit.
13. Remove tools and handling/loading equipment from area.

**9-13. POSTLOADING INSPECTION.**

- 9-14. Perform Postloading Inspection for weapons loaded by verifying the following:
1. Position all armament switches in accordance with Table 5-1.
  2. WEAPON LOADED sign in cockpit.
  3. Ground safety handles in LOCKED position on loaded stations.
  4. Swaybraces properly seated.
  5. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
  6. (BRU-33) Adapter cable installed.
  7. Verify suspension hooks open on unloaded stations.
  8. Inspect fuzes as follows:
    - a. (If applicable) Fuze covers removed.
    - b. (Mk 339 Mods 0/1) Fuze safe indication.
    - c. (Mk 339 Mods 0/1) Ensure desired fuze delay time set on primary and option dials.
    - d. (Mk 339 Mods 0/1) Safety pin removed from fuze band release stud and timer starting pin.
    - e. (FMU-140) Verify red tip on extended indicator tube is not protruding from radome.
    - f. (FMU-140) Ensure desired arm time is set.
    - g. (FMU-140) Ensure desired Height of Function (HOF) is set.
  9. Arming wire extractors properly installed (Figure 9-3).
  10. (CBU-78) Thermal battery firing device safety pin removed.
  11. (CBU-78) SD selector switch set as directed.

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12. Fin release band safety pin removed.

13. Proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).

14. Tools and handling/loading equipment removed from area.

15. Report status of aircraft to proper authority.

**9-15. PRIOR TO LAUNCH.**

9-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

9-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.

2. Secure access doors and panels.

9-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for CBU's in the rearming area.

9-19. **ARMING AREA.** There are no procedures to be performed for CBU's in the arming area.

**9-20. AFTER LANDING OR GROUND ABORT.**

9-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

9-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

9-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for CBU's in the dearming area before engine shutdown.

9-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

**WARNING**

Do not attempt to disarm partially or fully armed fuze. Notify proper authority.

If any component is missing, loose or damaged notify proper authority.

(Mk 339) If an arming wire is not installed in the fuze, the fuze may be partially armed. Notify proper authority.

(FMU-140) The fuze is to be considered armed if red is visible on the extended indicator pitot tube.

2. Verify fuzes are safe and arming wire extractors are installed.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Place WEAPON LOADED sign in cockpit.
5. (As applicable) Remove arming wires/extractors from empty stations.
6. Report status of aircraft to proper authority.

**9-25. TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 9-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 9-6).
  - b. Perform Weapon Inspection for weapons to be loaded (Paragraph 9-8).
  - c. Load weapon according to Weapon Loading procedures (Paragraph 9-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 9-6).
  - b. Perform Weapon Inspection (Paragraph 9-8).
4. Perform Postloading Inspection (Paragraph 9-13).
5. Perform Prior to Launch procedures (Paragraph 9-15).

**9-26. WEAPON UNLOADING.**

**9-27. BRU-32/BRU-33 RACK PREPARATION.** Prepare BRU-32/BRU-33 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.

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5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. Install safety pin in fin release band.
8. (Mk 339) Install safety pin in fuze band release stud and timer starting pin.
9. (FMU-140) Set ARM TIME switch to SAFE.
10. (CBU-78) Set SD selector switch to safe.
11. (CBU-78) Install battery firing device safety pin.
12. Install fuze protective cover(s).
13. Disconnect fin release, arming and (if applicable) option time wire extractors from aircraft.

<b>CAUTION</b>
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Verify handling/loading equipment is configured to accept weapon being unloaded.

14. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
15. Position handling/loading equipment under station to be unloaded and secure.
16. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with weapon tiedown straps.
17. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install hoisting band and trolleys on weapon.
  - b. Operate hoist until hoist is supporting weapon.

c. Position one person at nose and one person at tail of weapon to steady and guide weapon onto handling equipment.

**9-28. BRU-32/BRU-33 RACK UNLOADING.** Unload BRU-32/BRU-33 rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.

2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower weapon onto handling/loading equipment.
  - d. Secure weapon to handling equipment with weapon tiedown straps.

**NOTE**

If fuze OPTION TIME arming wire extractor removed, it must be reinstalled.

3. (If applicable) Reinstall OPTION TIME arming wire extractor.
4. Remove handling/loading equipment with weapon from under aircraft.
5. Install cartridge retainers and auxiliary cartridge caps.
6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove weapon and handling/loading equipment from area.





**SECTION X**  
**FIRE BOMBS**

**10-1. INTRODUCTION.**

10-2. This section contains loading and unloading information for the fire bomb listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

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**10-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

10-4. ASE authorized for loading fire bombs is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

10-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

**10-6. AIRCRAFT PREPARATION/INSPECTION.**

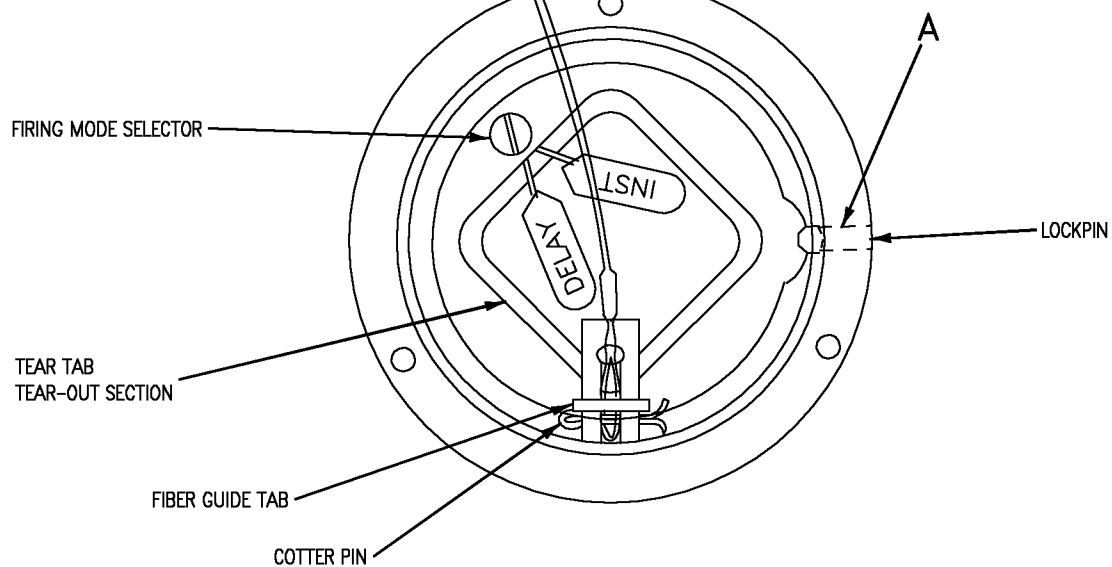
10-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.

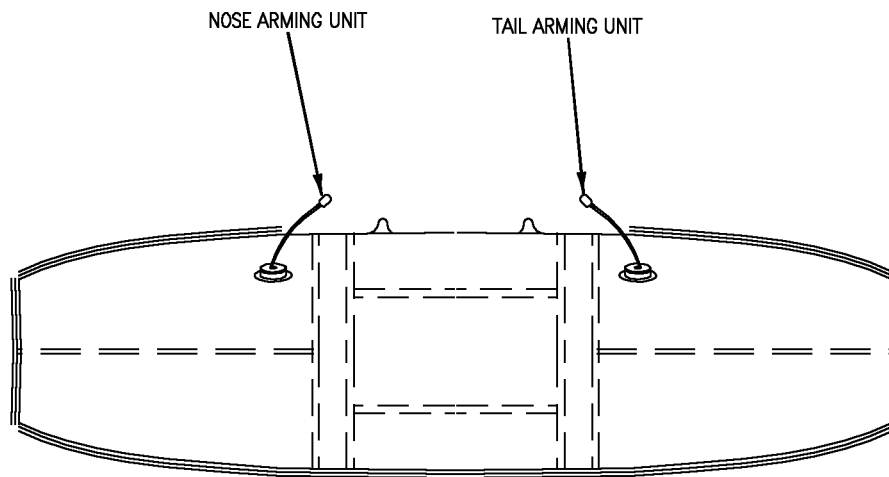
**10-8. WEAPON INSPECTION.**

10-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows (Figure 10-1 and Figure 10-2):

1. Ensure weapon is properly assembled, filled and not damaged.
2. Inspect suspension lugs for alignment and security.
3. Verify that weapon does not leak and that filler caps, retainer clamps, or rings are tight.



**Figure 10-1. Mk 13 Initiator**



RECOMMENDED ARMING LANYARD	
LANYARD	REQUIRED LANYARDS
FORWARD SIDE INITIATOR	SINGLE
AFT SIDE INITIATOR	SINGLE

ARMING LANYARD ROUTING	
DO NOT PRELOAD ARMING LANYARDS.	
FORWARD SIDE INITIATOR	1. CONNECT LANYARD TO NOSE ARMING UNIT. DO NOT ROUTE LANYARD UNDER SWAYBRACE OR THROUGH BOMB LUG.
AFT SIDE FUZE	1. CONNECT LANYARD TO TAIL ARMING UNIT. DO NOT ROUTE LANYARD UNDER SWAYBRACE OR THROUGH BOMB LUG.

**Figure 10-2. Arming Lanyard Routing**

**Fire Bombs**

4. Inspect Mk 13 initiator as follows:

**WARNING**

Mk 13 initiator must be considered armed if arming vanes extend through tear top. Notify proper authority.

Mk 13 initiator consists of Mk 273 Mod 1 igniter and a Mk 343 Mod 0 fuze. Disassembly of the initiator is not authorized.

Fire bombs must be filled and the Mk 13 initiator must be installed prior to loading the bomb on the aircraft. Gel spillage will result if the Mk 13 is installed or removed after bomb is loaded on the aircraft.

**CAUTION**

The Mk 13 initiator is for use only in the side wells of the Mk 77 Mod 4/5 fire bomb.

- a. Verify that a Mk 13 initiator is installed in both filler holes.

**CAUTION**

Exercise care when removing protective cover from Mk 13 initiator. If tear top is damaged, the initiator may dud. Notify proper authority.

- b. Remove the protective cover from the Mk 13 initiator. Retain the spare arming lanyard packed in the cover.

**WARNING**

If the tear-out section on the face of the Mk 13 initiator is missing, consider the Mk 13 initiator to be armed; do not attempt to dearm the initiator or remove it from the bomb. Notify proper authority.

- c. Verify that arming vanes are not extending through tear-out section and that the tear-out section is not damaged.

- d. Verify that arming lanyard is attached to the tear tab and that cotter pin and fiber guide tab are installed over tear tab and lanyard loop.

- e. Verify that the Mk 13 initiator is properly positioned in the filler hole. The lockpin must be engaged in the detent.

- f. Set desired functioning time by aligning slot in firing mode selector with the desired setting.

- g. Reinstall protective cover.

## **10-10. WEAPON LOADING.**

10-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 10-6) and Weapon Inspection (Paragraph 10-8) have been completed.

2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with weapon under station to be loaded and secure.
6. Bomb hoist loading (Paragraph 5-33):
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.
  - d. Remove weapon tiedown straps securing weapon to handling equipment.

### **NOTE**

Landing gear doors must be manually retracted when loading centerline station.

7. (If applicable) Retract landing gear doors and hold in position (Paragraph 5-19).
8. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

10-12. **BRU-32 LOADING.** Load BRU-32 as follows:

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

### **NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until weapon weight is supported by bomb rack suspension hooks.

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d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.

e. Rotate ground safety handle to the LOCKED position.

f. Remove weapon tiedown straps.

2. (If applicable) Bomb hoist loading:

a. Hoist weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.

b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

c. Ease hoist until weapon weight is supported by bomb rack suspension hooks.

d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.

e. Rotate ground safety handle to the LOCKED position.

3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.

4. (If applicable) Return landing gear doors to normal position.

**CAUTION**

Exercise care when removing protective cover from Mk 13 initiator. If tear top is damaged, the initiator may dud. Notify proper authority.

5. Remove Mk 13 initiator protective cover.

**WARNING**

Mk 13 initiator must be considered armed if arming vanes extend through tear-out section and unserviceable if tear-out section is damaged. Notify proper authority.

6. Verify that arming vanes are not protruding through tear-out section and that tear-out section is not damaged.

**CAUTION**

Do not preload arming lanyard.

7. Connect arming lanyards to aircraft (Figure 10-2). Refer to Paragraph 5-27 for general arming wire installation.

8. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

9. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
10. Place WEAPON LOADED sign in cockpit.
11. Remove tools and handling/loading equipment from area.

#### **10-13. POSTLOADING INSPECTION.**

10-14. Perform Postloading Inspection for weapons loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
6. Fire bomb not leaking or damaged.
7. Suspension hooks open on unloaded stations.
8. Arming lanyards properly routed and connected.
9. Inspect Mk 13 initiator as follows:
  - a. Retaining rings tight.
  - b. Tear out section of the initiator not damaged.
  - c. Initiator firing mode selectors set.
10. Verify proper code inputs inserted in Weapon Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
11. Tools and handling/loading equipment removed from area.
12. Report status of aircraft to proper authority.

#### **10-15. PRIOR TO LAUNCH.**

10-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

10-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

**Fire Bombs**

10-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for fire bombs in the rearming area.

10-19. **ARMING AREA.** There are no procedures to be performed for fire bombs in the arming area.

**10-20. AFTER LANDING OR GROUND ABORT.**

10-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

10-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

10-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for fire bombs in the dearming area before engine shutdown.

10-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

Mk 13 initiator must be considered armed if arming vanes extend through tear-out section or if tear-out section is missing. Notify proper authority.

2. Verify Mk 13 initiator safe.
3. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

4. (If applicable) Place WEAPON LOADED sign in cockpit.
5. (As applicable) Remove arming lanyards from empty stations.
6. Report status of aircraft to proper authority.

10-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 10-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 10-6).



- b. Perform Weapon Inspection for weapons to be loaded (Paragraph 10-8).
- c. Load weapons according to Weapon Loading procedures (Paragraph 10-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 10-6).
  - b. Perform Weapon Inspection (Paragraph 10-8).
4. Perform Postloading Inspection (Paragraph 10-13).
5. Perform Prior to Launch procedures (Paragraph 10-15).

#### **10-26. WEAPON UNLOADING.**

10-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. Disconnect initiator lanyard swivel from arming unit, coil lanyard inside cover and install cover on initiator.

#### **NOTE**

Landing gear doors must be retracted when unloading centerline station.

8. (If applicable) Retract landing gear doors and hold in position (Paragraph 5-19).

<b>CAUTION</b>
----------------

Verify handling/loading equipment is configured to accept weapon being unloaded.

9. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).

**Fire Bombs**

10. Position handling/loading equipment under station to be unloaded and secure.
11. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with weapon tiedown straps.
12. (If applicable) Bomb hoist unloading (Paragraph 5-33).
  - a. Install hoisting band and trolleys on weapon.



Do not use excessive force when operating hoist to support weapon.

- b. Operate hoist until hoist is supporting weapon.
  - c. Position one person at nose and one person at tail of weapon to steady and guide weapon onto handling equipment.

10-28. **BRU-32 UNLOADING.** Unload BRU-32 as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower weapon onto handling equipment.
  - d. Secure weapon to handling equipment with weapon tiedown straps.
3. Remove handling/loading equipment with weapon from under aircraft.
4. (If applicable) Return landing gear doors to normal position.
5. Install cartridge retainers and auxiliary cartridge caps.

6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove weapon and handling/loading equipment from area.



## SECTION XI MK 50 SERIES MINES

### 11-1. INTRODUCTION.

11-2. This section contains loading and unloading information for the mines listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

#### NOTE

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

Mk 52  
Mk 55  
Mk 56

### 11-3. ARMAMENT SUPPORT EQUIPMENT (ASE).

11-4. ASE authorized for loading mines is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

11-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

### 11-6. AIRCRAFT PREPARATION/INSPECTION.

11-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.

### 11-8. WEAPON INSPECTION.

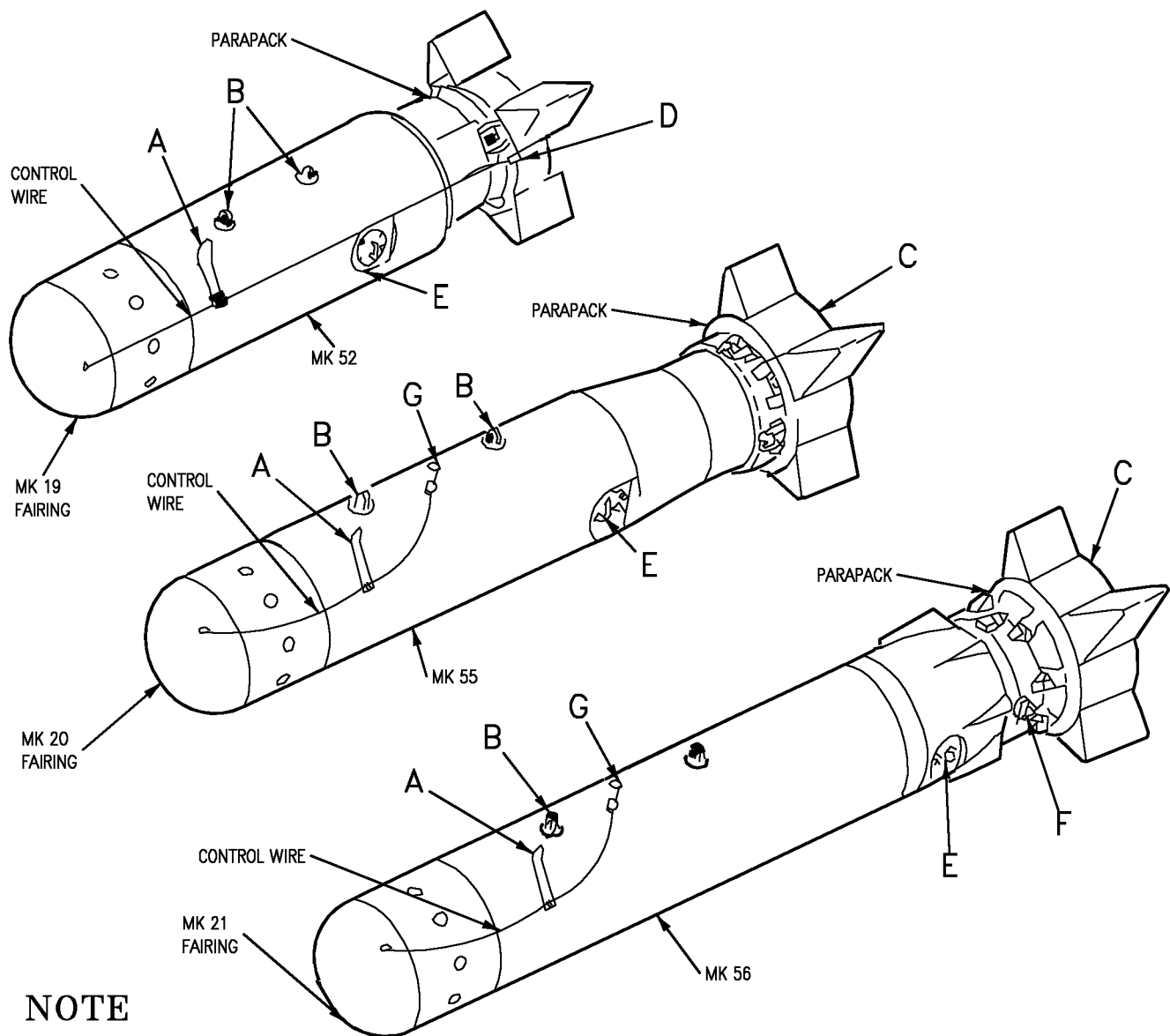
11-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows (Figure 11-1 and Figure 11-2):

1. Ensure copies of Airborne Weapon Assignment Sheets are available.
2. Verify weapon control number or identification number is stenciled on weapon and is in agreement with Airborne Weapon Assignment Sheet.

#### WARNING

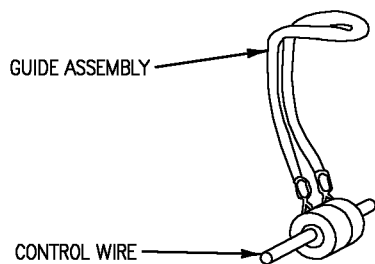
Do not put fingers into fairing shroud holes at any time.

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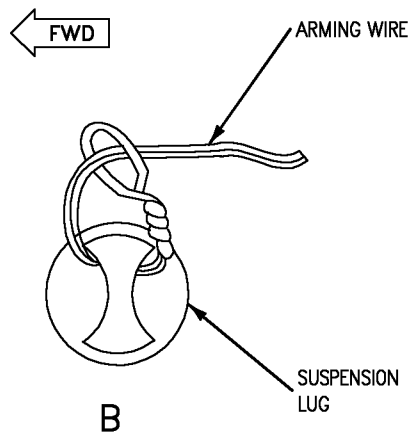


**NOTE**

ARMING WIRES  
 OMITTED FOR  
 CLARITY

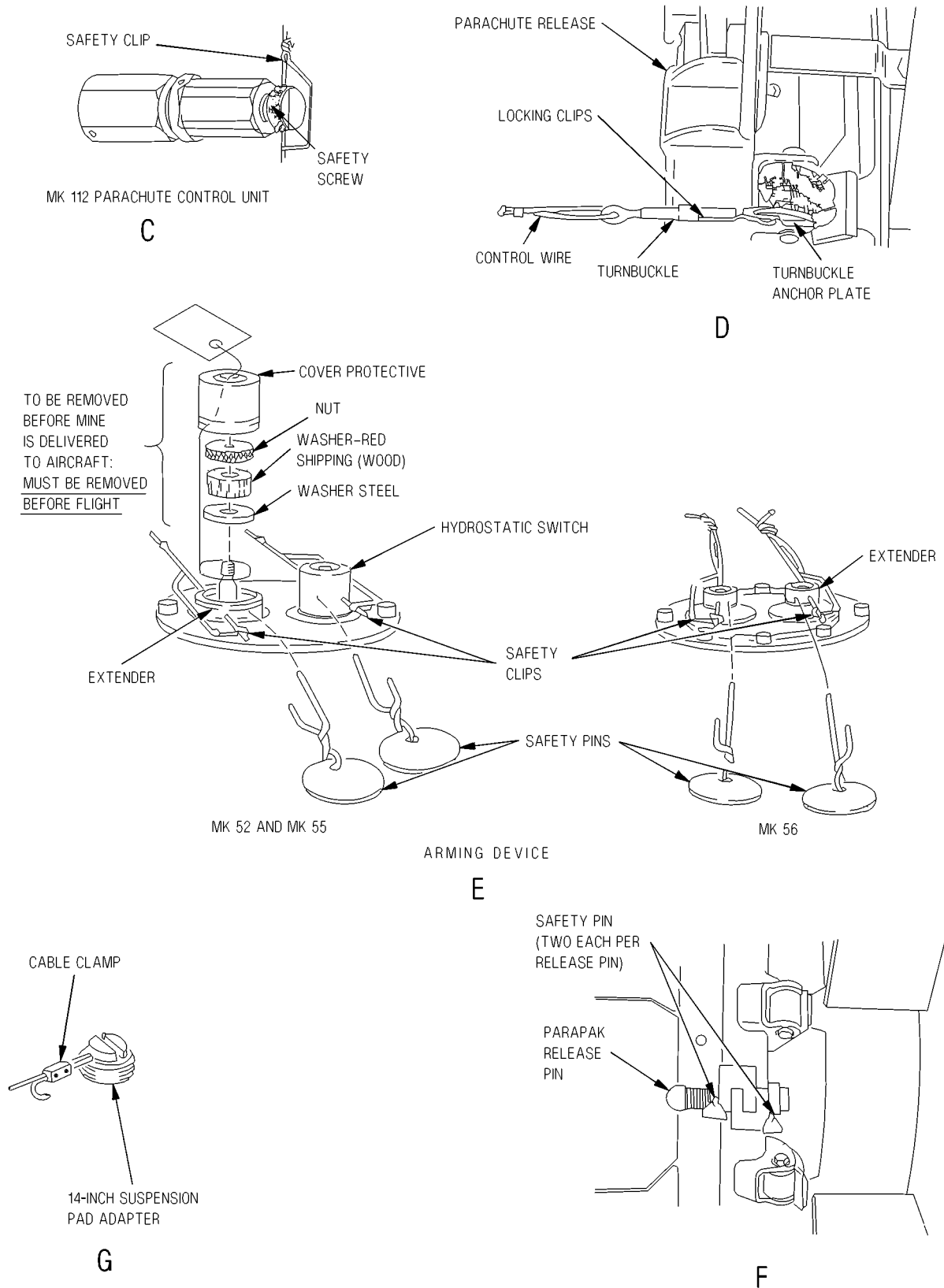


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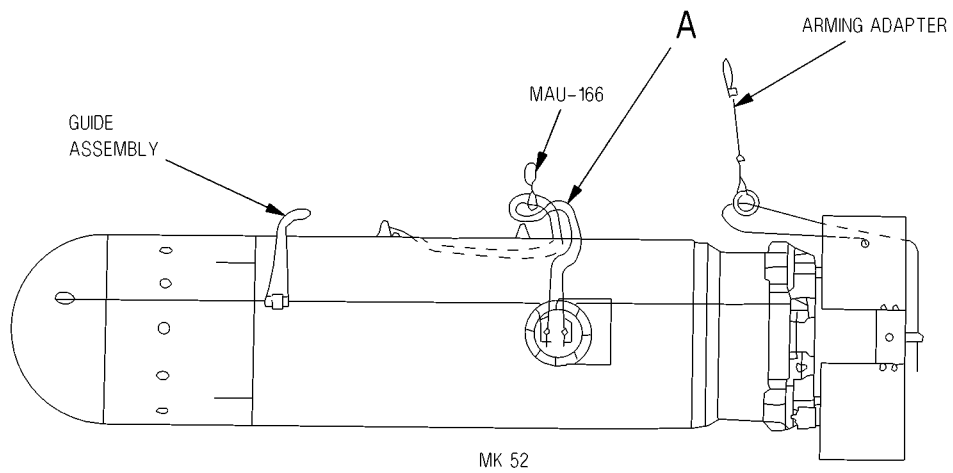


B

**Figure 11-1. Mk 52, Mk 55 and Mk 56 Mine Inspection (Sheet 1 of 2)**



**Figure 11-1. Mk 52, Mk 55 and Mk 56 Mine Inspection (Sheet 2)**



**Figure 11-2. Mk 52, Mk 55 and Mk 56 Arming Wire Installation (Sheet 1 of 3)**



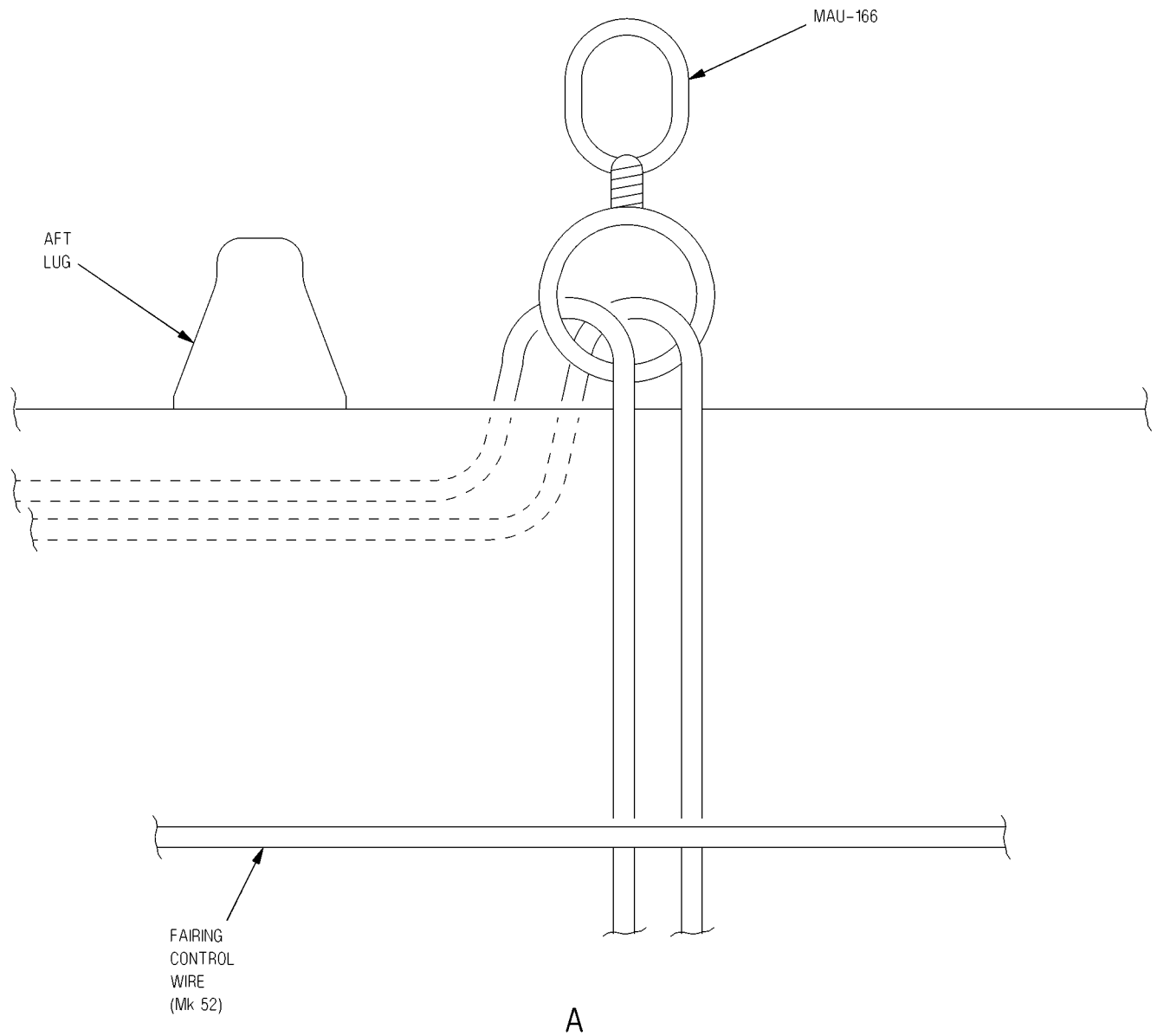
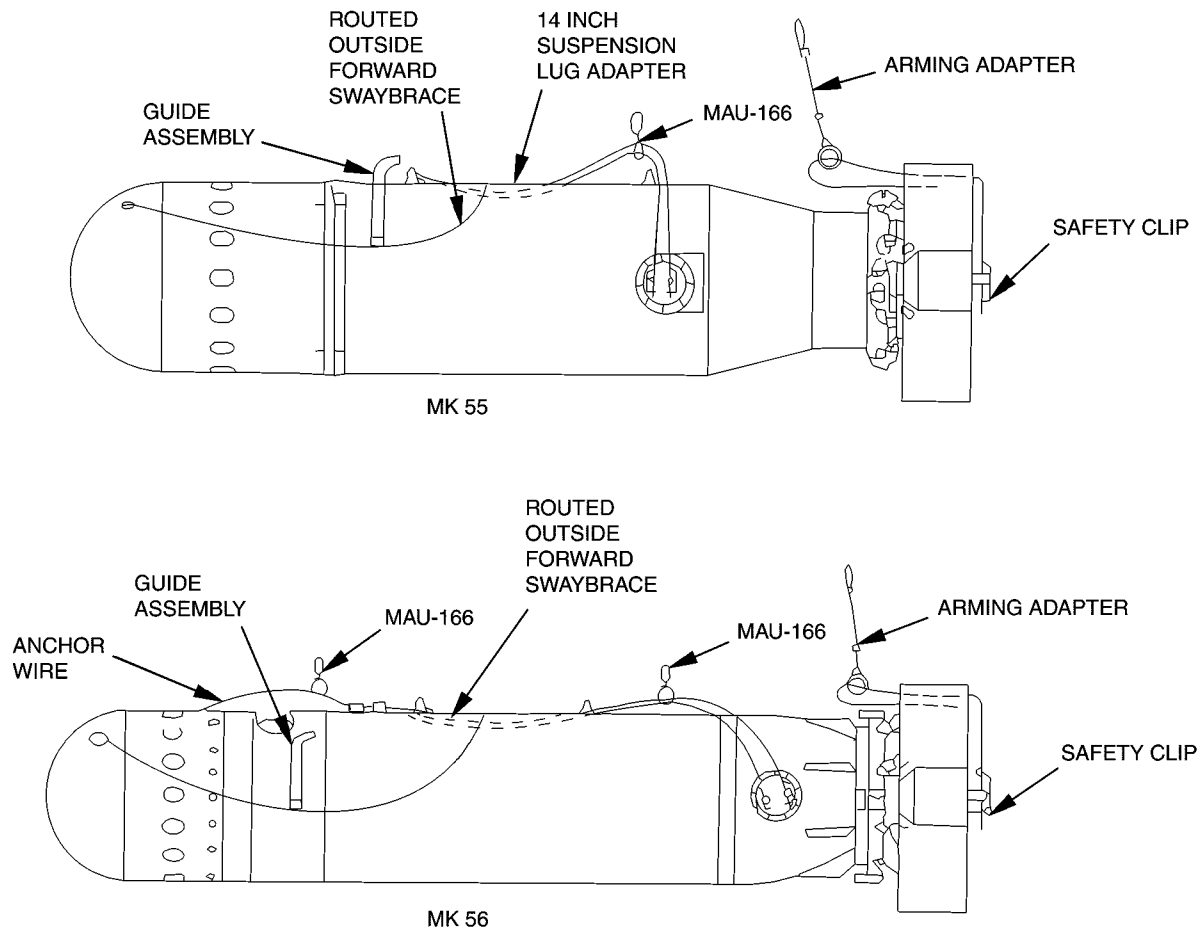


Figure 11-2. Mk 52, Mk 55 and Mk 56 Arming Wire Installation (Sheet 2)



ARMING WIRE ROUTING	
CONTROL WIRE	<ol style="list-style-type: none"> <li>1. ROUTED OUTSIDE SWAYBRACE.</li> <li>2. CONNECT GUIDE ASSEMBLY TO FORWARD OR CENTER POSITIVE ARMING LATCH.</li> </ol>
ARMING DEVICE	<ol style="list-style-type: none"> <li>1. (MK 52) ARMING DEVICE ARMING WIRE MUST BE ROUTED UNDER FAIRING CONTROL WIRE.</li> <li>2. (MK 56) ARMING DEVICE WIRE MUST BE ROUTED OUTSIDE FORWARD SWAYBRACE AND INSIDE AFT SWAYBRACE.</li> <li>3. CONNECT MAU-166 TO TAIL ARMING SOLENOID.</li> </ol>
PARACHUTE CONTROL UNIT	<ol style="list-style-type: none"> <li>1. CONNECT GUIDE ASSEMBLY/ARMING ADAPTER TO PYLON BAIL BAR.</li> </ol>
ANCOR WIRE (MK 56)	<ol style="list-style-type: none"> <li>1. CONNECT MAU-166 TO NOSE ARMING UNIT.</li> </ol>

Figure 11-2. Mk 52, Mk 55 and Mk 56 Arming Wire Installation (Sheet 3)

**CAUTION**

Do not pull control wire from nose fairing.

3. Verify weapon is properly assembled and not damaged.
4. Verify that suspension lugs are installed.

**CAUTION**

(Mk 52) Arming device arming wire must be routed under fairing control wire.

5. Verify arming device arming wires are attached to the forward lug and routed aft, along starboard side through MAU-166; (Mod 11) under parachute control wires (Mk 52); under fairing control wire, with safety clips/pins installed in arming device (Figure 11-2).

**WARNING**

Do not stand directly behind mine. Parapak is explosive.

6. Verify that parapak is installed and secured.
7. Verify that parachute control unit and safety screw are installed (Figure 11-1).
8. Verify parachute control unit wire is attached to the parapak fin and routed through the arming adapter with safety clip or arming wire installed in Mk 112 parachute control unit (Figure 11-1).
9. Mk 52 (Figure 11-1):
  - a. Verify Mk19 nose fairing installed, secured and not damaged.
  - b. Verify control wire is threaded through control wire guide assembly and control wire turnbuckle is attached to turnbuckle anchor plate.
  - c. Verify control wire is taut and two locking clips, or locking wire, is installed on turnbuckle.
  - d. (If applicable) Ensure arming device protective devices removed.
10. Mk 55 (Figure 11-1):
  - a. Verify Mk 20 nose fairing installed, secure, and not damaged.
  - b. (If applicable) Verify control wire is threaded through control wire guide assembly and adapter in 14 inch suspension lug well. Control wire must not pass through forward suspension lug.
  - c. Verify control wire is routed through cable clamp and control wire is slack.
  - d. Ensure arming device protective devices removed.

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11. Mk 56 (Figure 11-1):

- a. Verify Mk 21 nose fairing installed, secured and not damaged.
- b. Verify control wire is threaded through control wire guide assembly and adapter in 14 inch suspension lug well. Control wire must not pass through forward suspension lug.
- c. Verify control wire routed through cable clamp and control wire is slack.

**WARNING**

Mk 56 Service mine's anchor cable antifouling compound contains toxic PCBs. In case of leakage notify proper authority.

d. Verify anchor wire is attached to forward lug and routed through MAU-166; anchor wire is cut flush with bottom of mine (Figure 11-2).

e. Ensure that safety pins (4) are removed from parapack release pins (Figure 11-1).

**11-10. WEAPON LOADING.**

11-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Ensure that Aircraft Preparation/Inspection (Paragraph 11-6) and Weapon Inspection (Paragraph 11-8) have been completed.
2. Ensure aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with weapon under station to be loaded and secure.
6. Bomb hoist loading (Paragraph 5-33).
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.
  - d. Remove weapon tiedown straps securing weapon to handling equipment.
7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

11-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:

**NOTE**

Mine must be loaded as directed in Airborne Weapon Assignment Sheet.

Position fairing control wire outside of forward swaybrace.

(Mk 56) Position and hold fairing control wire and arming device arming wire outside forward swaybrace.

Arming device arming wire must be positioned inside aft swaybrace.

- a. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until weapon weight is supported by bomb rack suspension hooks.
- d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
- e. Rotate ground safety handle to the LOCKED position.
- f. Remove weapon tiedown straps.

2. (If applicable) Bomb hoist loading:



Mine may be tail heavy.

**NOTE**

Mine must be loaded as directed in Airborne Weapon Assignment Sheet.

Position fairing control wire outside of forward swaybrace.

(Mk 56) Position and hold fairing control wire and arming device arming wire outside forward swaybrace.

Arming device arming wire must be positioned inside aft swaybrace.

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- a. Hoist weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - c. Ease hoist until weapon weight is supported by bomb rack suspension hooks.
  - d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.
  4. Connect arming wires to aircraft (Figure 11-2). Refer to Paragraph 5-27 for general arming wire information.

**WARNING**

Parachute will eject when safety screw is removed unless safety clip/arming wire is installed.

5. (Mk 52) Pull parachute control wire tight and cut excess approximately 4 inches below control unit.
6. Remove safety screw from parachute control unit.
7. Remove safety pins from arming devices.
8. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).
9. Install cartridges in all loaded stations and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
10. Place WEAPON LOADED sign in cockpit.
11. Remove tools and handling/loading equipment from area.

**11-13. POSTLOADING INSPECTION.**

11-14. Perform Postloading Inspection for mines loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
6. Control wire guide assembly attached to forward or center positive arming latch.

7. Parapak secure; arming adapter attached to bail bar and safety screw removed.
8. (Mk 56) Safety pins (4) removed from release pins.
9. Arming device arming wires properly installed with MAU-166 connected to tail arming solenoid.
10. Fairing control wire routed outside of forward swaybrace.
11. (If applicable) Arming device safety pins, protective cover, nut, shipping (wood) and steel washers removed.
12. Suspension hooks open on unloaded stations.
13. All tape removed from mine.
14. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
15. Tools and handling/loading equipment removed from area.
16. Report status of aircraft to proper authority.

#### **11-15. PRIOR TO LAUNCH.**

11-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

11-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

11-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for Mk 50 mines in the rearming area.

11-19. **ARMING AREA.** There are no procedures to be performed for Mk 50 mines in the arming area.

#### **11-20. AFTER LANDING OR GROUND ABORT.**

11-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

11-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

11-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for Mk 50 mines in the dearming area before engine shutdown.

11-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

<b>WARNING</b>
----------------

If any component is missing, loose or damaged, notify proper authority.

If safety clips are inadvertently withdrawn from the arming device or parachute control unit, clear area and notify proper authority.

2. Verify safety clips are installed in arming device and parachute control unit.
3. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpected ordnance a WEAPON LOADED sign must be placed in the cockpit.

4. (If applicable) Place WEAPON LOADED sign in cockpit.
5. (As applicable) Remove arming adapters, control wire guide assemblies and swivels from empty stations.
6. Report status of aircraft to proper authority.

11-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 11-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 11-6).
  - b. Perform Weapon Inspection for weapons to be loaded (Paragraph 11-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 11-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 11-6).
  - b. Perform Weapon Inspection (Paragraph 11-8).
4. Perform Postloading Inspection (Paragraph 11-13).
5. Perform Prior to Launch procedures (Paragraph 11-15).



## **11-26. WEAPON UNLOADING.**

11-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.

### **WARNING**

If safety clips are inadvertently withdrawn from the arming device or parachute control unit, clear area and notify proper authority.

7. Install arming device safety pins.
8. Install safety screw in Mk 112 parachute control unit.

### **WARNING**

Do not put fingers in fairing shroud holes at any time.

### **CAUTION**

Do not pull Mk 56 anchor wire free from mine.

9. Disconnect control wire guide assemblies, swivels and arming adapters from aircraft.

### **CAUTION**

Verify handling/loading equipment is configured to accept weapon being unloaded.

10. (If applicable) Install hoist adapter and bomb hoist on station to be unloaded (Paragraph 5-33).
11. Position handling/loading equipment under station to be unloaded and secure.
12. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.

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- b. Secure weapon to weapon handling/loading equipment with weapon tiedown straps.

13. (If applicable) Bomb hoist unloading (Paragraph 5-33):

- a. Install hoisting band and trolleys on weapon.
- b. Operate hoist until hoist is supporting weapon.

c. Position one person at nose and one person at tail of weapon to steady and guide weapon onto weapon handling equipment.

11-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:

- a. Rotate ground safety handle to UNLOCKED.
- b. Rotate MANUAL RELEASE to open suspension hooks.
- c. Lower bomb truck/weapon loader.

2. (If applicable) Bomb hoist unloading:

- a. Rotate ground safety handle to UNLOCKED.
- b. Rotate MANUAL RELEASE to open suspension hooks.
- c. Operate hoist to lower weapon onto handling equipment.
- d. Secure weapon to handling equipment with weapon tiedown straps.

3. (Mk 52/55) (If applicable) Install shipping (wood) and steel washer, nut and protective cover.

4. Remove handling/loading equipment with weapon from under aircraft.

5. Install cartridge retainers and auxiliary cartridge caps.

6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).

7. Secure access doors and panels.

8. (If applicable) Remove/stow WEAPON LOADED sign.

9. Remove weapon and handling/loading equipment from area.

## SECTION XII MK 60 SERIES MINES

### 12-1. INTRODUCTION.

12-2. This section contains loading and unloading information for the mines listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

#### NOTE

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

Mk 62  
Mk 63  
Mk 65

### 12-3. ARMAMENT SUPPORT EQUIPMENT (ASE).

12-4. ASE authorized for loading mines is listed in Table 5-7. Refer to this table to match equipment with weapon to be loaded.

12-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

### 12-6. AIRCRAFT PREPARATION/INSPECTION.

12-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, if applicable 5-11, and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. (As applicable) Verify BRU-32 swaybraces are properly seated against BRU-33.
4. (As applicable) Verify adapter cable installed (Figures 3-5 and 3-6).

### 12-8. WEAPON INSPECTION.

12-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows:

1. Ensure copies of Airborne Weapon Assignment Sheets are available.
2. Verify weapon control number or identification number is stenciled on weapon and is in agreement with Airborne Weapon Assignment Sheet.

**NOTE**

Steps 4 through 9 apply to the Mk 62 and 63 mines only. Skip to Step 10 for inspection procedures for the Mk 65 mine, after Step 3.

3. Ensure weapon is properly assembled and not damaged.

**WARNING**

If arming wire is inadvertently withdrawn from the arming device, or red indication is visible in arming device inspection window, clear the area and notify proper authority.

4. Verify safe condition of the Mk 32 arming device as follows (Figure 12-1):

**WARNING**

If arming wire is inadvertently withdrawn from the arming device or red indication is visible in arming device inspection window, notify proper authority.

If arming wire/cable safety clip is missing from the arming device and no safety pin/wire is installed, the arming device must be considered armed. If an armed or partially armed condition is indicated, notify proper authority.

Black letter A against red background in the inspection window indicates a fully armed arming device. Notify proper authority.

If white S on green background is not visible in inspection window or if a dull gray background appears in inspection window, the arming device is partially armed. Notify proper authority.

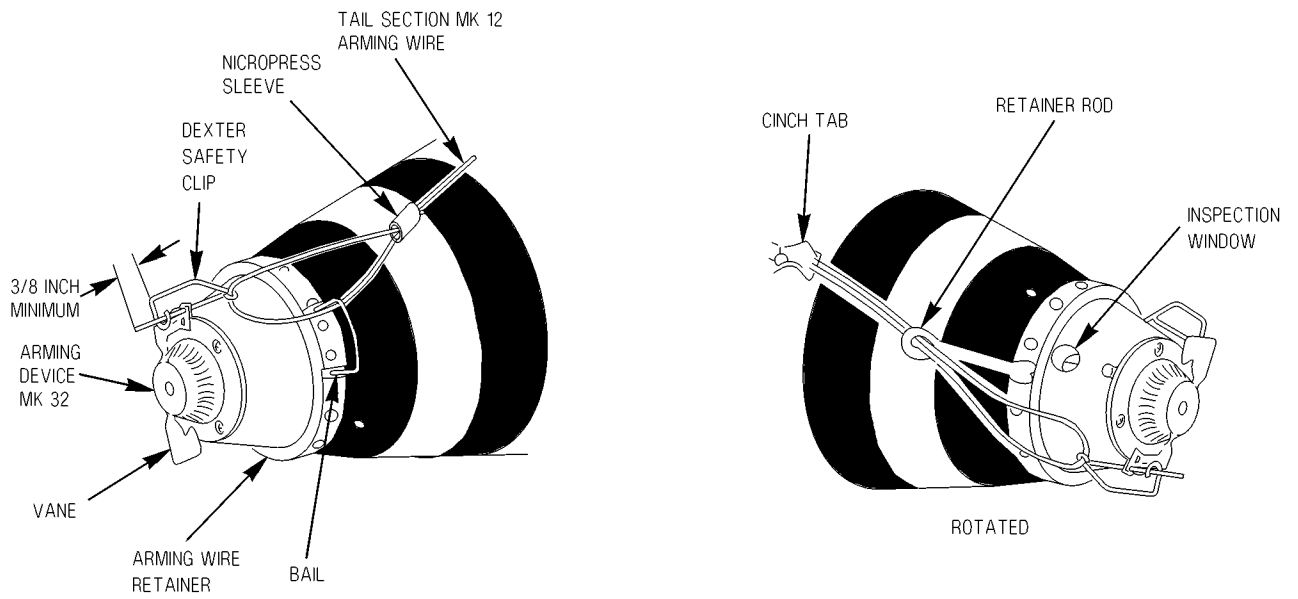
- a. Verify white S on green background is visible in inspection window.
- b. Ensure that fin/tail section to arming device wire/cable safety clip is installed in outer (small) hole of arming device vane.
- c. Verify safety pin/wire is removed from arming vane and arming wire guide.
- d. Verify watertight screw is installed in set screw hole in nose and watertight plug is installed in electric fuze cable well.

5. Verify safe condition of the Mk 57 Target Detection Device (TDD) as follows (Figure 12-2):

**WARNING**

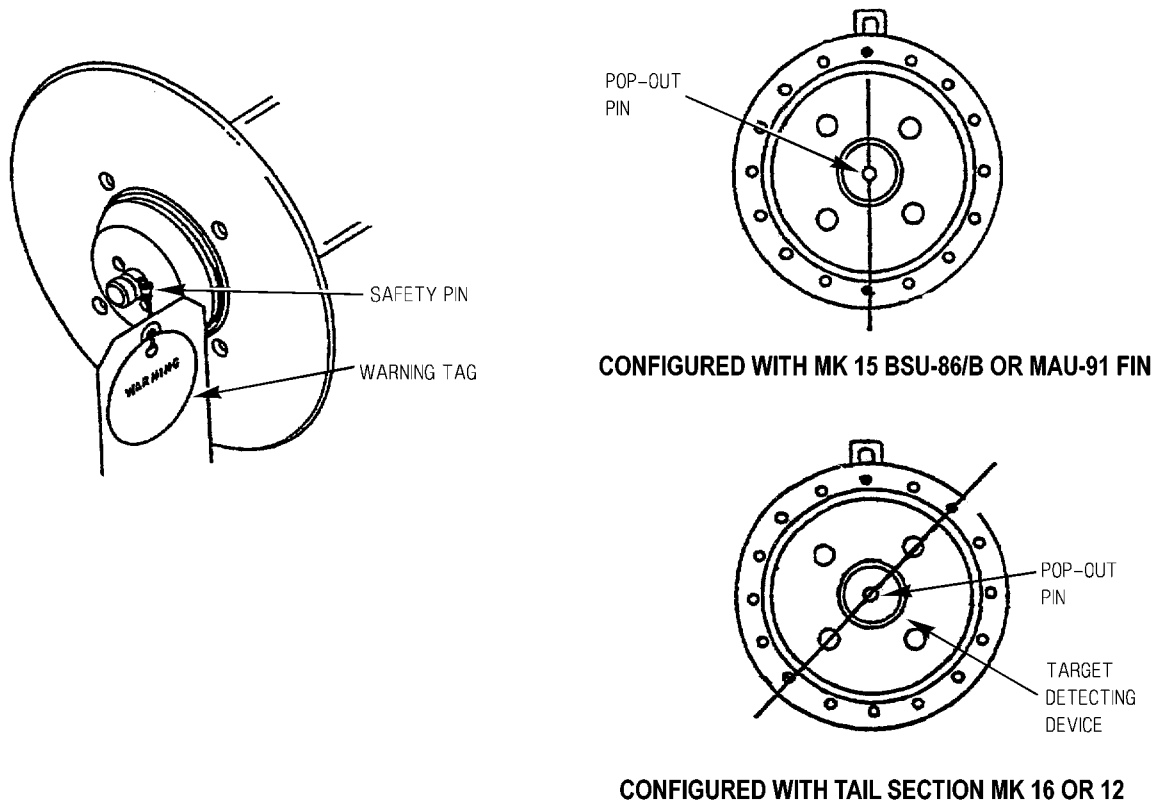
If arming wire/safety clip or safety pin is missing from the TDD it must be considered armed. Clear the area and notify proper authority.

- a. Verify that the TDD arming wire or safety clip is installed through pop-out pin; tagged safety pin is removed.



**MK 32 / ARMING WIRE RETAINER**

**Figure 12-1. Mk 32 Arming Device**



**Figure 12-2. Mk 57 Target Detection Device (TDD)**

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**Mk 60 Series Mines**

6. Mk 62 mine with Mk 15/BSU-86 fin (Figure 12-3):

a. Fin orientation in X configuration.

b. Verify suspension lugs are installed and aligned with bottom of lug eye flush with bomb body.

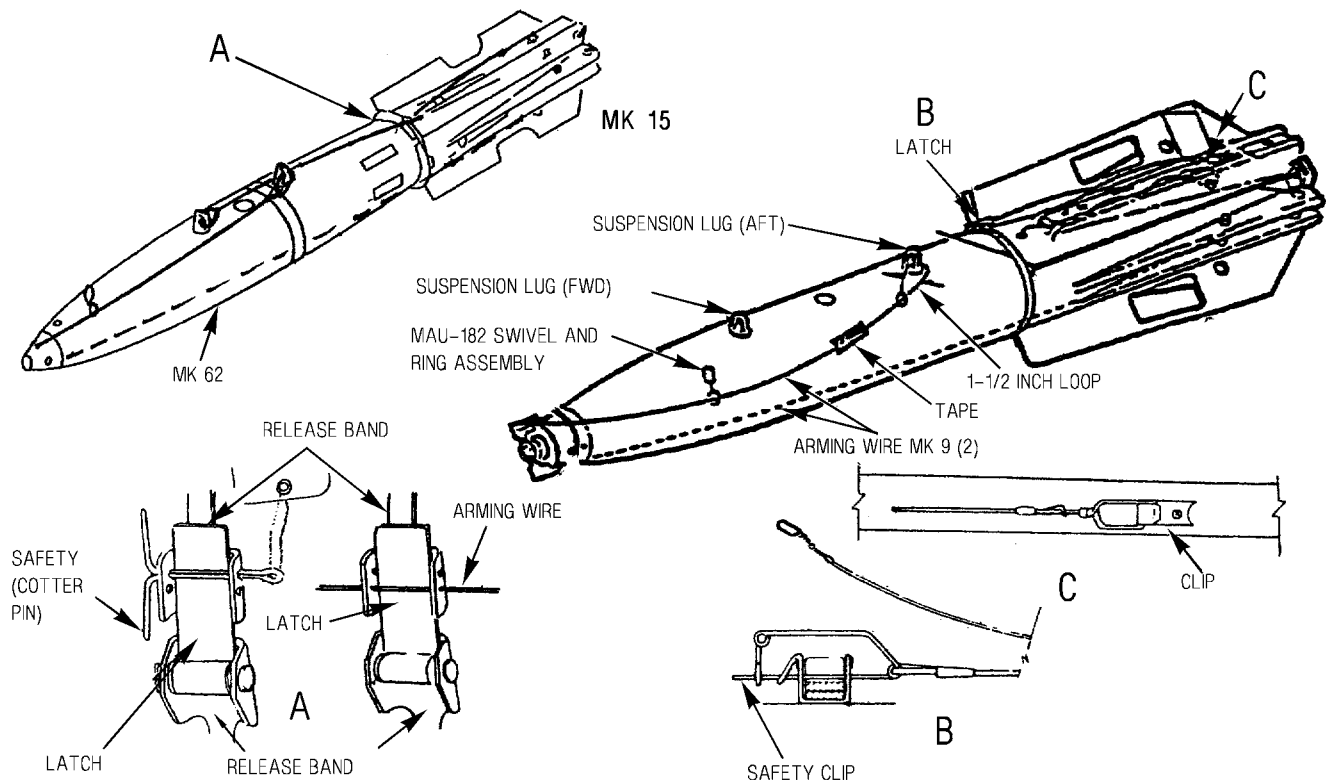
(1) (Mk 15 fin) Mk 9 fin release wire attached to forward suspension lug, through arming adapter, installed in fin release band latch, through guide tube and extends approximately 10 inches beyond fin; safety (cotter) pin is installed in fin release band latch.

(2) (BSU-86 fin) Fin release lanyard safety clip is installed in fin release band latch; safety (cotter) pin installed; lanyard swivel stowed in stowage clip.

c. TDD arming wire (Mk 3) attached to top of fin link pin, routed through hole in top of fin, through TDD pop-out pin, through hole in bottom of fin and extends 6 inches below fin.

d. Arming device arming wire (Mk 9) attached to aft suspension lug, through MAU-182, with safety clip installed in small (outer) hole of arming device vane.

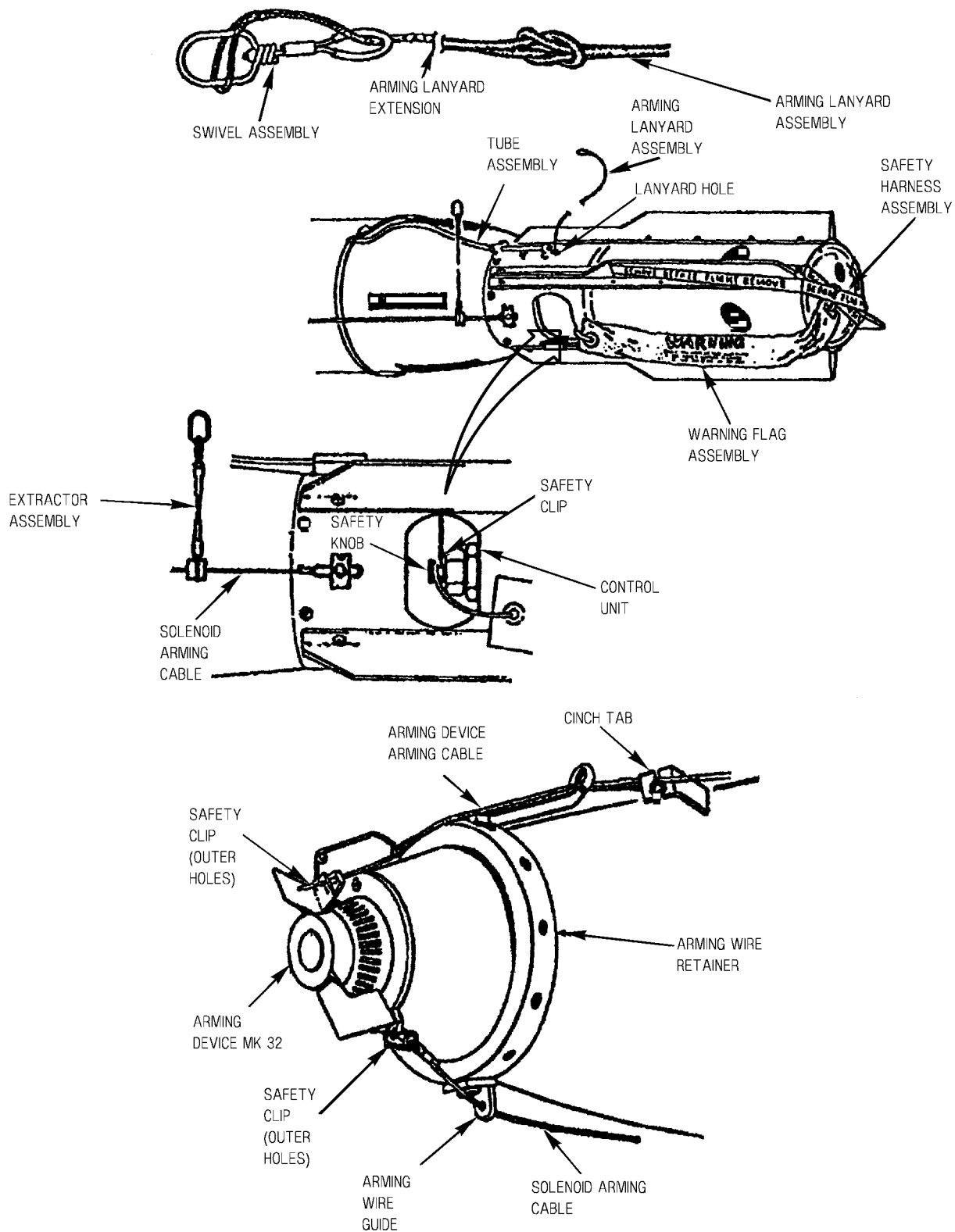
e. Arming device arming wire (Mk 9) attached to bottom fin link pin, routed along underside of mine, with safety clip installed in small (outer) hole of arming device vane.



**Figure 12-3. Mk 62 with Mk 15/BSU-86 Fin**

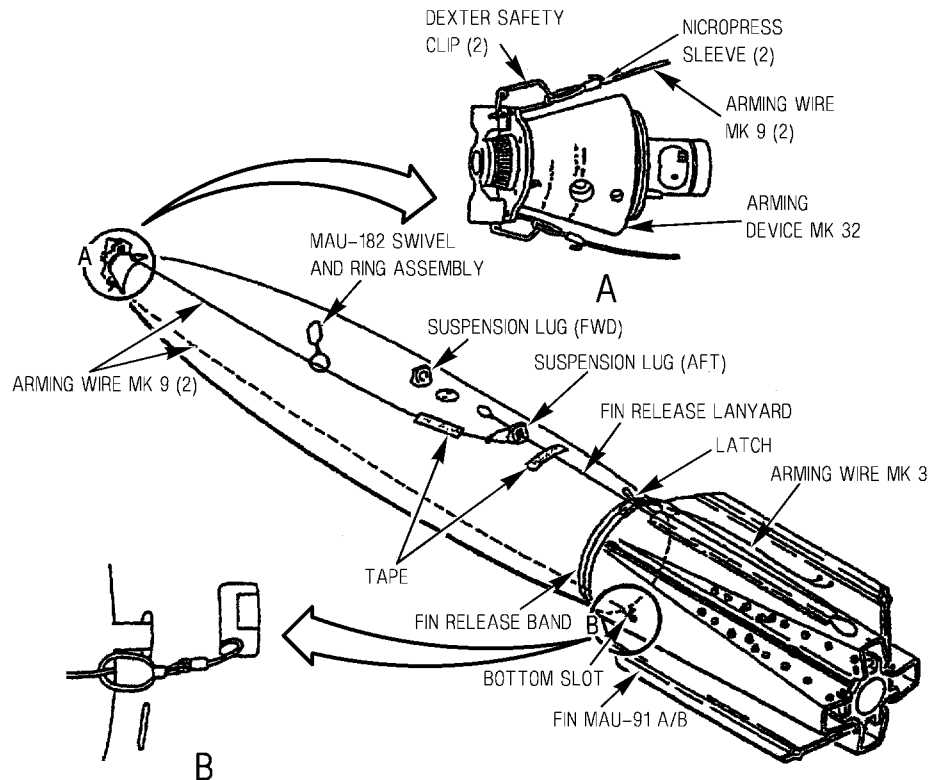
7. Mk 62 mine with Mk 16 tail section (Figure 12-4):
  - a. Fin orientation in X configuration.
  - b. Verify suspension lugs are installed and aligned with bottom of lug eye flush with bomb body.
  - c. Verify arming wire retainer is installed and secured with rod pointing aft.
  - d. Arming device arming cable exits right side of tail section, routed along side of bomb, through arming wire retainer rod; safety clip installed in outer (small) hole of arming vane; arming cable routed back through rod and cinch tab positioned as to remove slack from arming cable.
  - e. Solenoid arming cable safety clip installed in outer (small) hole of arming device vane, routed through arming wire guide, along left side of bomb body, through extractor lanyard assembly and cable secured to tail section with no slack in cable. Extractor assembly taped to bomb body.
  - f. Verify that TDD arming cable safety clip is installed in the TDD pop-out pin and that safety pin with warning streamer is removed.
  - g. Verify control unit in tail is safed by safety clip, and safety knob with warning flag is installed.
  - h. Verify collar on tube assembly is fully engaged and firmly seated against the forward tube guide on tail.
  - i. Verify tube assembly bracket is against rolled end of tube assembly.
  - j. Verify hose clamp is tight, perpendicular to mine axis, with clamp end bent back over tube and safety wired to tube assembly bracket.
  - k. Verify arming lanyard extension (red) attached to swivel assembly; routed through tube assembly and taped to hose clamp strap.
  - l. Ensure safety strap is removed from tail section.
8. Mk 63 mine with MAU-91 fin (Figure 12-5):
  - a. Fin orientation in X configuration.
  - b. Verify aft suspension lug is backed out two turns from flush and aligned.
  - c. Ensure fin locking pins are installed and pin chain passes under fin release lanyard.
  - d. Ensure fin release lanyard is installed in lanyard channel, release pin secure to lanyard and installed in release band latch from forward side.
  - e. Ensure fin release band safety pin installed.
  - f. Ensure fin release lanyard is routed forward through aft suspension lug.
  - g. TDD arming wire (Mk 3) attached to holes in fin blade, routed through hole in top of fin, through TDD pop-out pin, through hole in bottom of fin and extends 6 inches below fin.

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**Figure 12-4. Mk 62 with Mk 16 Tail Section**





**Figure 12-5. Mk 63 with MAU-91 Fin**

h. Arming device arming wire (Mk 9) attached to aft suspension lug, through MAU-182, with safety clip installed in small (outer) hole of arming device vane.

i. Fin to arming device arming wire (Mk 9) attached to slot in bottom of fin, routed along under side of mine, with safety clip installed in small (outer) hole of arming device vane.

9. Mk 63 with Mk 12 tail section (Figure 12-6):

a. Fin orientation in X configuration.

b. Verify aft suspension lug is backed out two turns from flush and aligned.

c. Verify safety harness is installed on the Mk 12 tail and routed through hole in tail with safety clip installed in parachute control unit assembly.

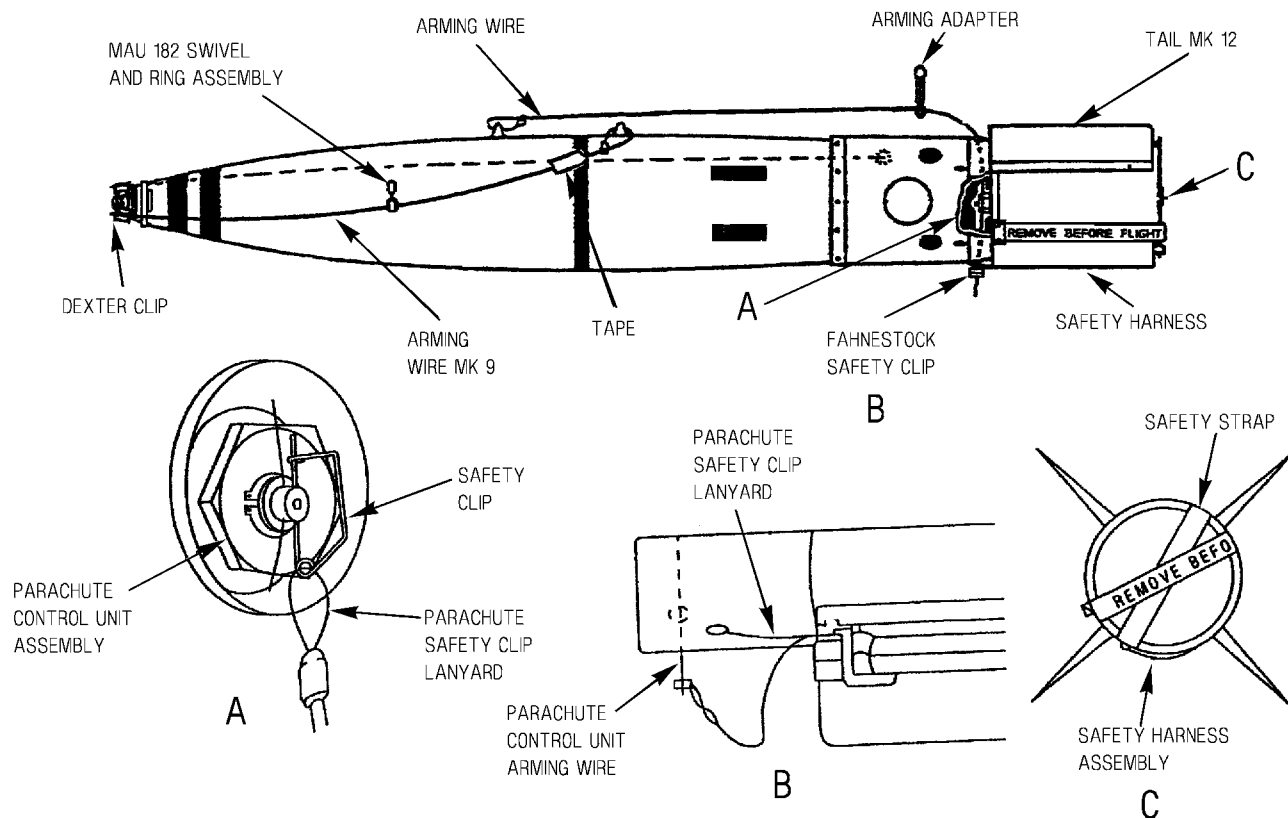
d. Parachute control unit arming wire attached to forward suspension lug; through arming adapter through hole in top of tail section; installed through the control unit assembly and extends below the tail; safety harness lanyard is attached to the arming wire below the tail with a Fahnestock clip.

**WARNING**

If arming wire/safety clip is missing from TDD, the TDD must be considered armed.

Clear the area and notify proper authority.

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**Figure 12-6. Mk 63 with Mk 12 Tail Section**

- e. Arming cable safety clip is installed in Mk 57 TDD pop-out pin; tagged safety clip removed.
- f. Arming device arming cable exits right side of tail section, routed along side of bomb, through arming wire retainer rod; safety clip installed in small (outer) hole of arming vane; arming cable routed back through rod and cinch tab positioned as to remove slack from arming cable.
- g. Arming device arming wire (Mk 9) attached to aft suspension lug routed through the MAU-182 and is safety clipped to the arming device.

10. Mk 65 mine (Figure 12-7):

- a. Verify nose fairing is installed.
- b. Ensure lanyard cover assembly is removed.
- c. (Exercise/Training Mine) Remove short leg of lanyard.
- d. (Service Mine) Remove long leg of lanyard.
- e. Ensure lanyard routed through hydrostatic and battery firing pin housing.
- f. Ensure HI ALT/LO ALT switch set to LO.
- g. Ensure tail section cover secure, parachute not visible and safety bar is installed.

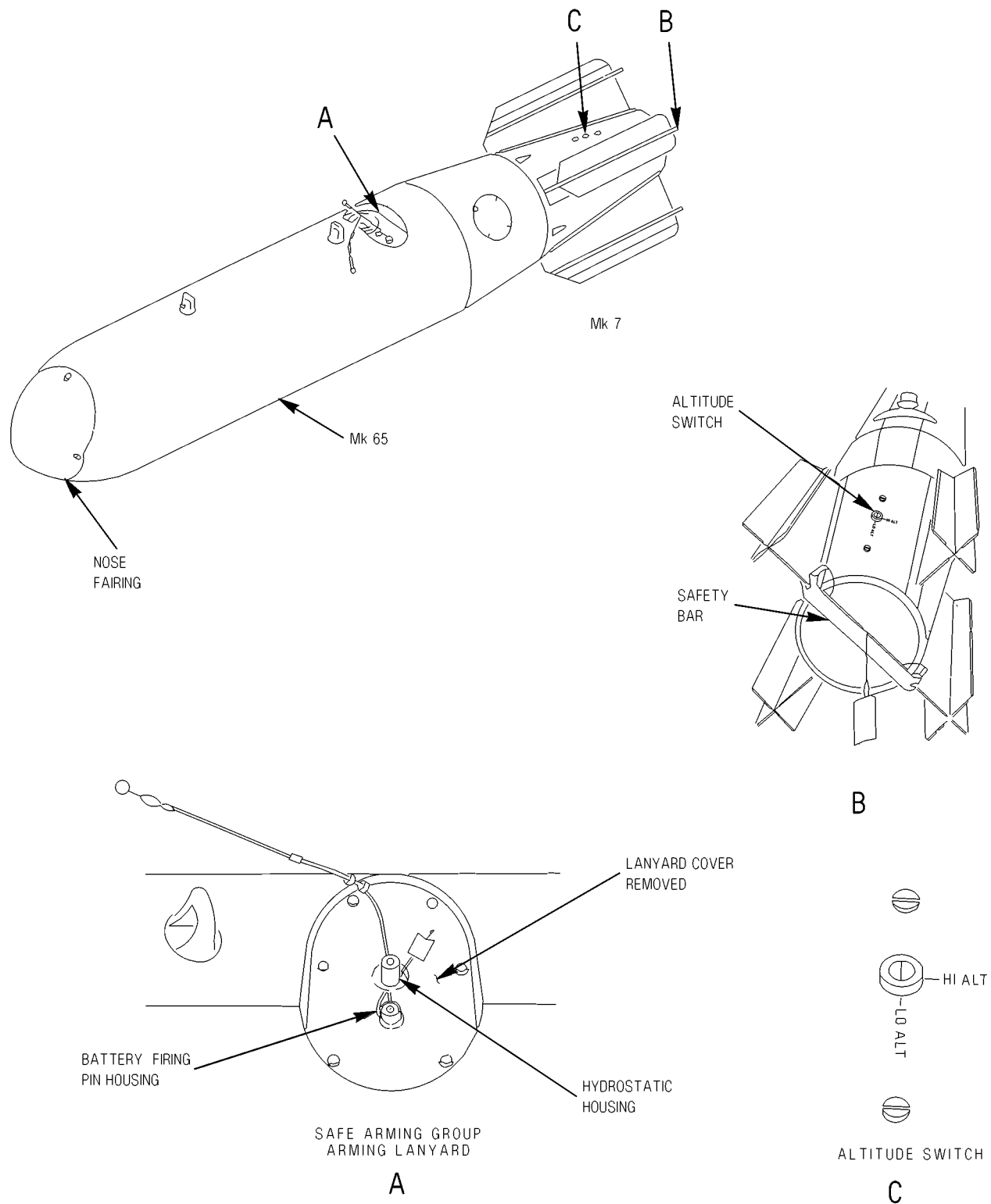


Figure 12-7. Mk 65 Mine

**12-10. WEAPON LOADING.**

12-11. **BRU-32/BRU-33 RACK PREPARATION.** Prepare BRU-32/BRU-33 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 12-6) and Weapon Inspection (Paragraph 12-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with weapon under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33):
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.
  - d. Remove weapon tiedown straps securing weapon to handling equipment.
7. (If applicable) Manual hoisting bar loading (Mk 62 w/Mk 15/BSU-86, Mk 63 w/MAU-91 only):

**NOTE**

HLU-256/E hoisting bars may be used to load bombs up to and including 1000 pounds.

- a. Insert manual hoisting bar in tail assembly of weapon until hoisting bar bottoms.
- b. Remove weapon tiedown straps securing weapon to handling/loading equipment.

**NOTE**

Landing gear doors must be manually retracted when loading centerline station.

8. (If applicable) Retract landing gear doors and hold in position (Paragraph 5-19).
9. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

12-12. **BRU-32/BRU-33 RACK LOADING.** Load BRU-32/BRU-33 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:

**WARNING**

(MK 62/63) If arming wire is inadvertently withdrawn from the TDD or arming device or a red indication is visible in arming device inspection window, clear the area and notify the proper authority.

**CAUTION**

During weapon loading, ensure Mk 62/63 lower arming wire is not withdrawn.

Use extreme care when loading to prevent damage to pylon fuel receptacle valve.

**NOTE**

Weapon must be loaded as directed in Airborne Weapon Assignment Sheet.

(Mk 63 w/MAU-91) Hold release band lanyard outside of rear swaybrace.

(Mk 62 w/Mk 15 on BRU-33) Install arming adapter on right forward swaybrace before engaging lugs in suspension hooks.

- a. Raise weapon (if applicable, install arming adapter). Continue raising weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-13, as applicable).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until weapon weight is supported by bomb rack suspension hooks.
  - d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
  - f. Remove weapon tiedown straps.
2. (If applicable) Bomb hoist loading:

**WARNING**

(Mk 62/63) If arming wire is inadvertently withdrawn from the TDD or arming device or red indication is visible in arming device inspection window, clear the area and notify proper authority.

**CAUTION**

During weapon loading, ensure Mk 62/63 lower arming wire is not withdrawn.

Use extreme care when loading to prevent damage to pylon fuel receptacle valve.

**NOTE**

Weapon must be loaded as directed in Airborne Weapon Assignment Sheet.

(Mk 63 w/MAU-91) Hold release band lanyard outside of rear swaybrace.

(Mk 62 w/Mk 15 on BRU-33) Install arming adapter on right forward swaybrace before engaging lugs in suspension hooks.

- a. Hoist weapon (if applicable, install arming adapter). Continue raising weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-13, as applicable).
  - c. Ease hoist until weapon weight is supported by bomb rack suspension hooks.
  - d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. (If applicable) Manual hoisting bar loading (Mk 62/63 only):

**WARNING**

(Mk 62/63) If arming wire is inadvertently withdrawn from the TDD or arming device or red indication is visible in arming device inspection window, clear the area and notify proper authority.

Maintain lifting pressure on weapon until it has been verified that the weapon is supported by suspension hooks.

**CAUTION**

During weapon loading, ensure Mk 62/63 lower arming wire is not withdrawn.

Use extreme care when loading to prevent damage to pylon fuel receptacle valve.

**NOTE**

Weapon must be loaded as directed in Airborne Weapon Assignment Sheet.

(Mk 63 w/MAU-91) Hold release band lanyard outside of rear swaybrace.

(Mk 62 w/Mk 15 on BRU-33) Install arming adapter on right forward swaybrace before engaging lugs in suspension hooks.

- a. Lift weapon (if applicable, install arming adapter) until both suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-9 or 5-13, as applicable).
- c. Ease lifting pressure sufficiently to verify that the weapon is supported by the bomb rack suspension hooks.

d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.

e. Rotate ground safety handles to the LOCKED position.

4. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.

5. (If applicable) Return landing gear doors to normal position.

**CAUTION**

Do not preload arming wires/lanyards.

**NOTE**

(Mk 63 w/MAU-91) Fin release lanyard must be on top of arming device arming wire.

**CAUTION**

(Mk 62 w/Mk 16) When loading the left stations of BRU-33 racks, ensure lanyard extension (parachute) crosses aft of the solenoid arming cable (arming device) lanyard extractor assembly.

6. Connect arming wires/lanyards/extractors to aircraft (Figures 12-8 through 12-10). Refer to Paragraph 5-27.

**CAUTION**

Control unit safety pin must be in line with lanyard hole in fin after removal of safety knob.

7. Remove safety knob with warning flag.

8. (Mk 63 w/Mk 12) Remove safety harness as follows:

a. Remove safety clip from parachute control unit.

b. Remove fahnestock clip from parachute control unit arming wire.

c. Loosen and remove safety harness from lower then upper tail fin.

9. (Mk 62/63) Ensure arming device safety wire/pin is removed.

10. (Mk 62 w/Mk 15/BSU-86, Mk 63 w/MAU-91) Remove release band safety (cotton) pin.

11. (Mk 65) Remove safety bar from tail section.

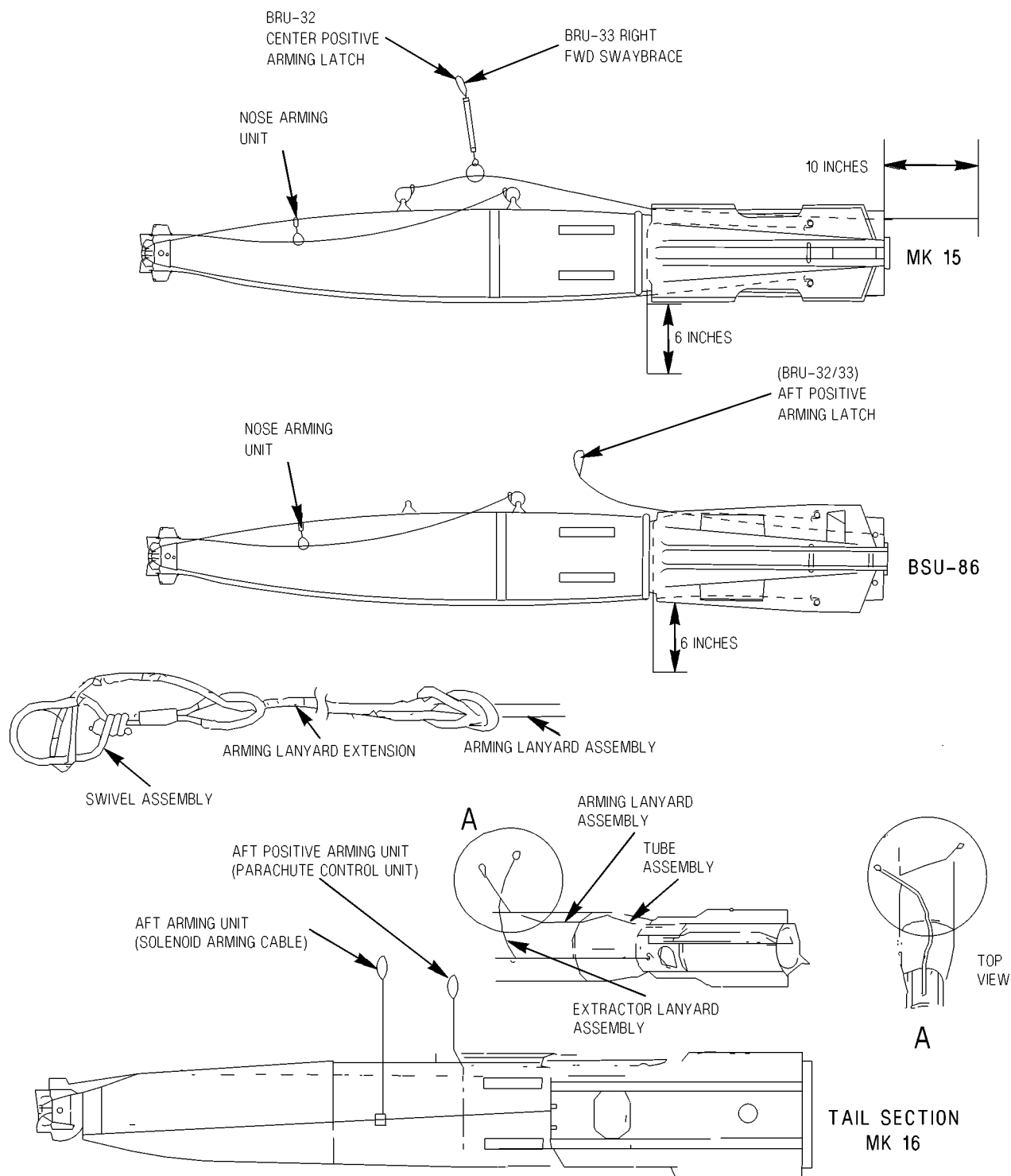
12. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

13. Install cartridges in all loaded stations and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).

14. Place WEAPON LOADED sign in cockpit.

15. Remove tools and handling/loading equipment from area.

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**NOTE**

SWIVEL ASSEMBLY INSTALLED ON LANYARD EXTENSION (RED)  
 AFTER ROUTING THROUGH TUBE ASSEMBLY.

WHEN LOADING LEFT VER STATION, ENSURE LANYARD EXTENSION  
 (PARACHUTE CROSSES AFT OF SOLENOID ARMING CABLE EXTRACTOR  
 ASSEMBLY).

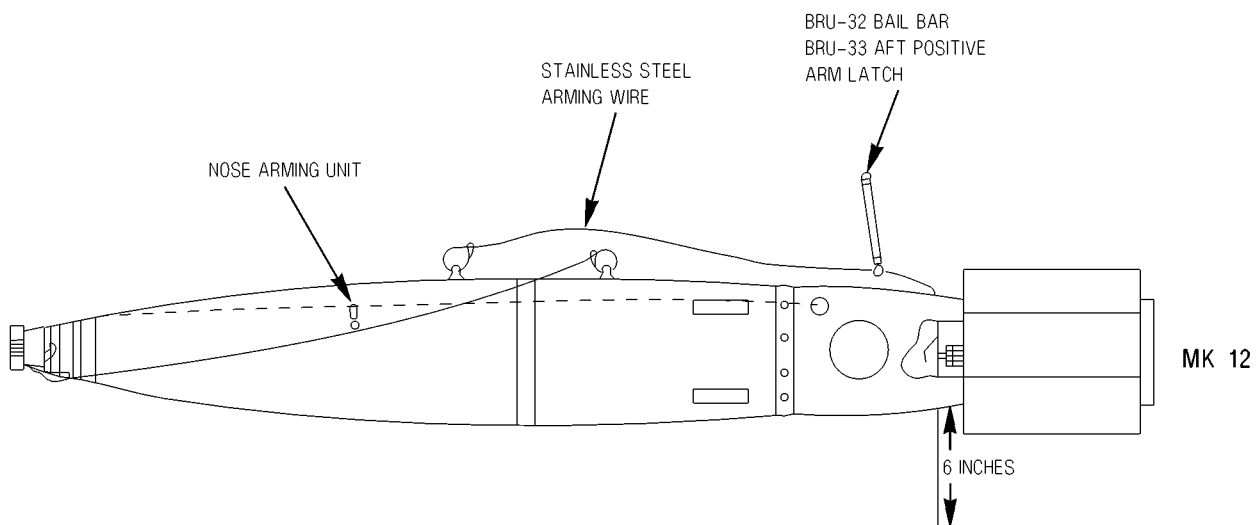
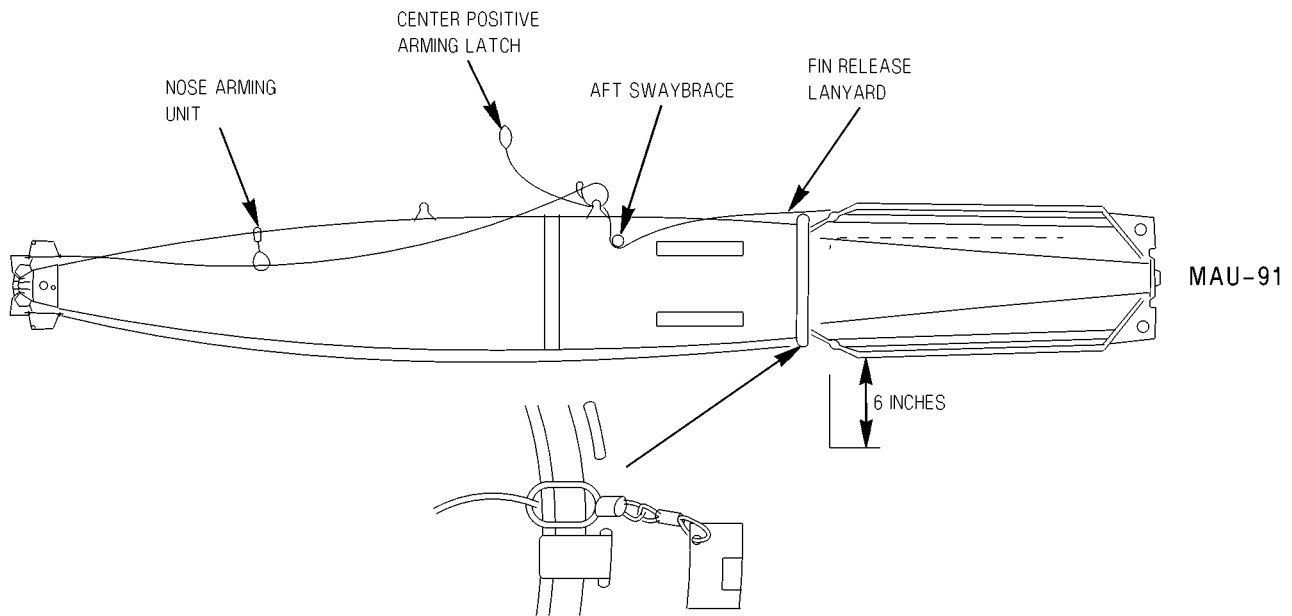
**Figure 12-8. Mk 62 Mine Arming Wire Installation**  
**(Sheet 1 of 2)**



ARMING WIRE ROUTING		
FIN RELEASE	(MAU-91)	1. ROUTED FWD OUTSIDE OF SWAYBRACE THROUGH AFT SUSPENSION LUG AND ATTACH TO CENTER POSITIVE ARMING LATCH.
	(MK 12)	1. (BRU-32) CONNECT ARMING ADAPTER TO BAIL BAR. 2. (BRU-33) CONNECT ARMING ADAPTER TO AFT POSITIVE ARMING LATCH.
TDD	(MAU-91)	1. ARMING WIRE ATTACHED THROUGH 2 HOLES IN TOP FIN, ROUTED FWD AND DOWN THROUGH POP-OUT PIN. 2. ARMING WIRE EXTENDS APPROXIMATELY 6 INCHES FROM POINT OF EXIT.
	(MK 12)	1. LANYARD SAFETY CLIP FROM TAIL INSTALLED THROUGH POP-OUT PIN.
FIN TO NOSE	(MAU-91)	1. ARMING WIRE LOOPED THROUGH LOWER FIN SECTION RELEASE BAND RETAINING SLOT. 2. SAFETY CLIP INSTALLED THROUGH SMALL HOLE IN ARMING VANE.
	(MK 12)	1. LANYARD ROUTED FWD THROUGH RETAINER BAR, THROUGH SAFETY CLIP INSTALLED THROUGH SMALL HOLE IN ARMING VANE, BACK THROUGH RETAINER BAR, ATTACHED WITH CINCH TAB.
ARMING DEVICE	(MAU-91)	1. ARMING WIRE ATTACHED TO AFT LUG, ROUTED FORWARD THROUGH MAU-182 AND SAFETY CLIP INSTALLED THROUGH SMALL HOLE OF ARMING VANE. 2. CONNECT MAU-182 TO NOSE ARMING UNIT.
	(MK 12)	1. ARMING WIRE ATTACHED TO AFT LUG, ROUTED FORWARD THROUGH MAU-182, TAPED TO WEAPON, ROUTED OUTSIDE BAIL, THROUGH SAFETY CLIP INSTALLED IN SMALL HOLE IN ARMING VANE, ATTACHED WITH SWEDGE FITTING.
ARMING DEVICE SAFETY WIRE		1. REMOVED

**Figure 12-8. Mk 62 Mine Arming Wire Installation  
(Sheet 2)**

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**Figure 12-9. Mk 63 Arming Wire Installation (Sheet 1 of 2)**

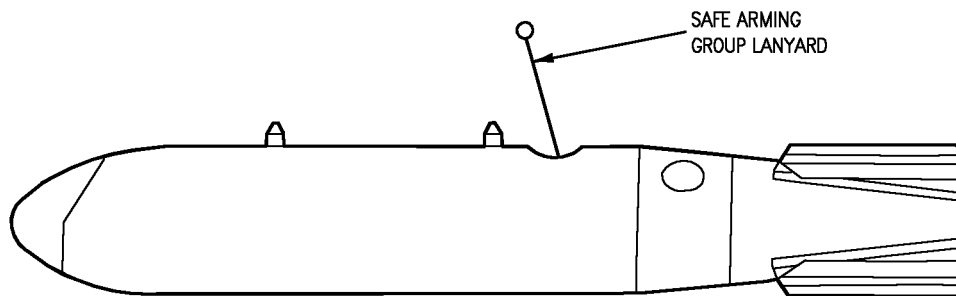
ARMING WIRE ROUTING		
FIN RELEASE	(MAU-91)	1. ROUTED FWD OUTSIDE OF SWAYBRACE THROUGH AFT SUSPENSION LUG AND ATTACH TO CENTER POSITIVE ARMING LATCH.
	(MK 12)	1. (BRU-32) CONNECT ARMING ADAPTER TO BAIL BAR. 2. (BRU-33) CONNECT ARMING ADAPTER TO AFT POSITIVE ARMING LATCH.
TDD	(MAU-91)	1. ARMING WIRE ATTACHED THROUGH 2 HOLES IN TOP FIN, ROUTED FWD AND DOWN THROUGH POP-OUT PIN. 2. ARMING WIRE EXTENDS APPROXIMATELY 6 INCHES FROM POINT OF EXIT.
	(MK 12)	1. LANYARD SAFETY CLIP FROM TAIL INSTALLED THROUGH POP-OUT PIN.
FIN TO NOSE	(MAU-91)	1. ARMING WIRE LOOPED THROUGH LOWER FIN SECTION RELEASE BAND RETAINING SLOT. 2. SAFETY CLIP INSTALLED THROUGH SMALL HOLE IN ARMING VANE.
	(MK 12)	1. LANYARD ROUTED FWD THROUGH RETAINER BAR, THROUGH SAFETY CLIP INSTALLED THROUGH SMALL HOLE IN ARMING VANE, BACK THROUGH RETAINER BAR, ATTACHED WITH CINCH TAB.
ARMING DEVICE	(MAU-91)	1. ARMING WIRE ATTACHED TO AFT LUG, ROUTED FORWARD THROUGH MAU-182 AND SAFETY CLIP INSTALLED THROUGH SMALL HOLE OF ARMING VANE. 2. CONNECT MAU-182 TO NOSE ARMING UNIT.
	(MK 12)	1. ARMING WIRE ATTACHED TO AFT LUG, ROUTED FORWARD THROUGH MAU-182, TAPED TO WEAPON, ROUTED OUTSIDE BAIL, THROUGH SAFETY CLIP INSTALLED IN SMALL HOLE IN ARMING VANE, ATTACHED WITH SWEDGE FITTING.
ARMING DEVICE SAFETY WIRE		1. REMOVED

**Figure 12-9. Mk 63 Arming Wire Installation (Sheet 2)**

### **12-13. POSTLOADING INSPECTION.**

12-14. Perform Postloading Inspection for weapons loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.
6. (BRU-33) Adapter cable installed.
7. Suspension hooks open on unloaded stations.
8. Arming wires/lanyards/extractors properly routed and connected.
9. (Mk 62/63) Arming device safety wire removed.
10. (Mk 62 w/Mk 15/BSU-86, Mk 63 w/MAU-91) Fin release band safety pin removed.



ARMING WIRE ROUTING	
SAFE ARMING GROUP	<ol style="list-style-type: none"> <li>1. (EXERCISE/TRAINING) REMOVE SHORT LEG OF SAFE ARMING GROUP LANYARD.</li> <li>2. (SERVICE) REMOVE LONG LEG OF SAFE ARMING GROUP LANYARD.</li> <li>3. (EXERCISE/TRAINING) CONNECT LANYARD SWIVEL TO BAILBAR.</li> <li>4. (SERVICE) CONNECT LANYARD SWIVEL TO TAIL ARMING UNIT.</li> </ol>

**Figure 12-10. Mk 65 Mine Arming Wire Installation**

11. Mk 62 w/Mk 16 tail section:
  - a. Fin to arming device cable installed.
  - b. Safety knob with warning flag removed.
  - c. Safety strap is removed from tail section.
12. Mk 63 w/Mk 12 tail section:
  - a. Fin to arming device arming cable installed.
  - b. Arming device arming cable installed.
  - c. Parachute control unit arming wire installed/connected.
  - d. Tail section safety harness removed.
13. Mk 65:
  - a. Safety bar removed.
  - b. HI ALT/LO ALT switch set to LO ALT.

14. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).

15. Tools and handling/loading equipment removed from area.

16. Report status of aircraft to proper authority.

#### **12-15. PRIOR TO LAUNCH.**

12-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup and in the arming area. Perform prior to launch procedures as follows:

12-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

12-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for Mk 60 series mines in the rearming area.

12-19. **ARMING AREA.** There are no procedures to be performed for Mk 60 series mines in the arming area.

#### **12-20. AFTER LANDING OR GROUND ABORT.**

12-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

12-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

12-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for Mk 60 series mines in the dearming area before engine shutdown.

12-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

### **WARNING**

If any component is missing, loose, or damaged, notify proper authority.

(Mk 62/63) If arming wire is inadvertently withdrawn from the TDD or arming device, or red indication is visible in arming device inspection window, clear area and notify proper authority.

2. Verify arming device/TDD safe and arming wires/lanyard installed.

### **NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

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3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. Position all armament switches in accordance with Table 5-1.
5. (If applicable) Remove swivels/lanyards from empty stations.
6. Report status of aircraft to proper authority.

12-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 12-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 12-6).
  - b. Perform Weapon Inspection for weapons to be loaded (Paragraph 12-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 12-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 12-6).
  - b. Perform Weapon Inspection (Paragraph 12-8).
4. Perform Postloading Inspection (Paragraph 12-13).
5. Perform Prior to Launch Procedures (Paragraph 12-15).

**12-26. WEAPON UNLOADING.**

12-27. **BRU-32/BRU-33 RACK PREPARATION.** Prepare BRU-32/BRU-33 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.

<b>WARNING</b>
----------------

(Mk 62/63) If arming wire is inadvertently withdrawn from the TDD or arming device, or red indication is visible in arming device inspection window, clear area and notify proper authority immediately.

7. Mk 62/63 mine:
  - a. (Mk 62 w/Mk 16) Install safety knob with warning flag on parachute control unit.
  - b. (Mk 62 w/Mk 15/BSU-86, Mk 63 w/MAU-91) Install fin release band safety pin.
  - c. Mk 63 w/Mk 12:
    - (1) Install safety harness on upper then lower fin.
    - (2) Install fahnestock clip on parachute control unit arming wire.
    - (3) Install safety clip in parachute control unit.
8. (Mk 65 mine) Install safety bar.

**NOTE**

(Mk 62 w/Mk 15 on BRU-33) Arming adapter cannot be disconnected until weapon is lowered approximately 2 inches below rack.

9. Disconnect arming wire/fin release lanyard/extractor/swivels/double-end loop from aircraft.

**NOTE**

Landing gear doors must be retracted when unloading centerline station.

10. (If applicable) Retract landing gear doors and hold in position (Paragraph 5-19).

<b>CAUTION</b>
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Verify handling/loading equipment is configured to accept weapon being unloaded.

11. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
12. Position handling/loading equipment under station to be unloaded and secure.
13. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with weapon tiedown straps.
14. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install hoisting band and trolleys on weapon.
  - b. Operate hoist until hoist is supporting weapon.

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c. Position one person at nose and one person at tail of weapon to steady and guide weapon onto handling equipment.

15. (If applicable) Manual hoisting bar unloading (Mk 62/63 only):

**NOTE**

Hoisting bars may be used to unload weapons up to and including 1000 pounds.

a. Insert hoisting bar in tail fin assembly of weapon until hoist bar bottoms.

12-28. **BRU-32/BRU-33 RACK UNLOADING.** Unload BRU-32/BRU-33 rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:

a. Rotate ground safety handle to UNLOCKED.

b. Rotate MANUAL RELEASE to open suspension hooks.

**NOTE**

(Mk 62 w/Mk 15 on BRU-33) Arming adapter must be disconnected after weapon has been lowered approximately 2 inches below rack.

c. (Mk 62 w/Mk 15 on BRU-33) Lower bomb truck/weapon loader approximately 2 inches and disconnect arming adapter from aircraft.

d. Lower weapon.

e. Secure weapon to handling equipment with weapon tiedown straps.

2. (If applicable) Bomb hoist unloading:

a. Rotate ground safety handle to UNLOCKED.

b. Rotate MANUAL RELEASE to open suspension hooks.

**NOTE**

(Mk 62 w/Mk 15 on BRU-33) Arming adapter must be disconnected after weapon has been lowered approximately 2 inches below rack.

c. (Mk 62 w/Mk 15 on BRU-33) Operate hoist to lower weapon approximately 2 inches and disconnect arming adapter from aircraft.

d. Lower weapon onto handling equipment.

e. Secure weapon to handling equipment with weapon tiedown straps.

3. (If applicable) Manual hoisting bar unloading (Mk 62/63 only):



- a. Rotate ground safety handle to UNLOCKED.
- b. Support weapon weight and rotate MANUAL RELEASE to open suspension hooks.

**NOTE**

(Mk 62 w/Mk 15 on BRU-33) Arming adapter must be disconnected after weapon has been lowered approximately 2 inches below rack.

- c. (Mk 62 w/Mk 15 on BRU-33) Lower weapon approximately 2 inches and disconnect arming adapter from aircraft.
- d. Lower weapon onto handling equipment.
- e. Secure weapon to handling equipment with weapon tiedown straps.
4. Remove handling/loading equipment with weapon from under aircraft.
5. (If applicable) Return landing gear doors to normal position.
6. Install cartridge retainers and auxiliary cartridge caps.
7. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
8. Secure access doors and panels.
9. (If applicable) Remove/stow WEAPON LOADED sign.
10. Remove weapon and handling/loading equipment from area.



## **SECTION XIII** **PYROTECHNICS**

### **13-1. INTRODUCTION.**

13-2. This section contains loading and unloading information for the pyrotechnics listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

### **NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

LUU-2 Series Parachute Flare  
LUU-19 Series IR Parachute Flare  
Mk 58 Marine Location Marker

### **13-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

13-4. ASE authorized for loading pyrotechnics is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

13-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to specific weapon and load being performed are mandatory for use.

1. None.

### **13-6. AIRCRAFT PREPARATION/INSPECTION.**

13-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, Paragraph 5-14, and as follows:

1. Verify BRU-32 swaybraces are properly seated against MER/BRU-41.
2. Verify adapter cable installed (Figure 3-7).
3. Ensure suspension hooks are open on stations to be loaded.
4. (MER) Electrical safety pin installed (Paragraph 5-17).
5. (MER) Set mode selector switch as directed.
6. Install swaybrace adapter brackets (Paragraph 5-15).
7. Retract swaybraces and lock jamnuts on stations not being loaded.

### **13-8. WEAPON INSPECTION.**

13-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapons for loading as follows:

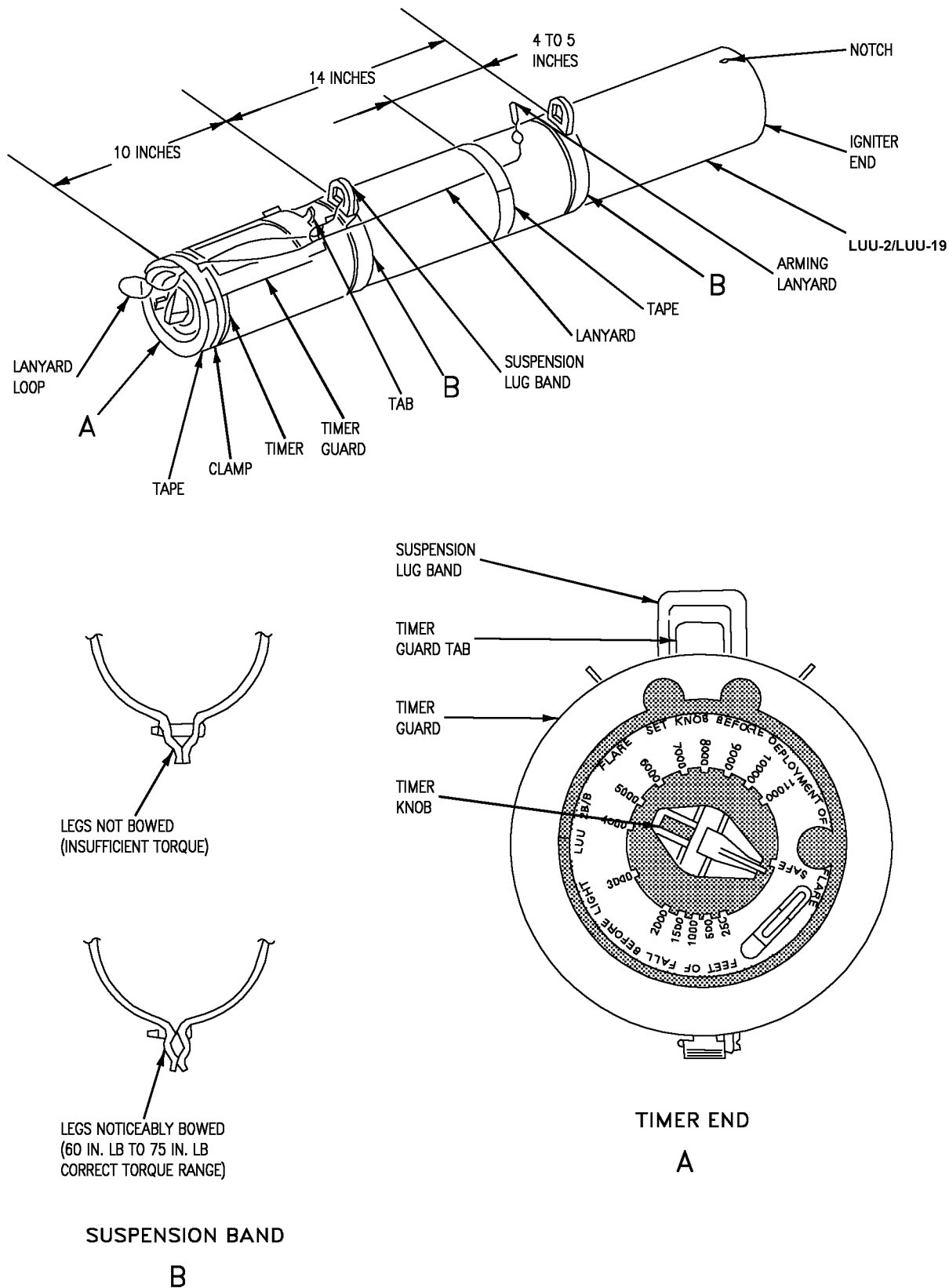


Figure 13-1. LUU-2/LUU-19 Flare Inspection

1. LUU-2/LUU-19 Flares (Figure 13-1).

**NOTE**

If at anytime during inspection, the timer is accidentally activated, do not remove guard from timer. Place hand over timer to prevent the timer from falling off when it releases. After release, hold timer and cut cord connecting the timer assembly to the parachute package and remove spring and timer. Tape the end of the flare to retain parachute pack. Discard spring and timer. Contact EOD personnel to dispose of the flare.

Flares must be configured in accordance with NAVSEA SW 050-AB-MMA-010 Vol.1 (NAVAIR 11-15-7).

- a. Verify timer is set to SAFE.
- b. Exterior not damaged.

**NOTE**

Suspension bands must be aligned with notch on igniter end of flare.

- c. Suspension bands installed and aligned with notch.
- d. Timer guard installed; tab is aligned with suspension lugs.

**NOTE**

Ensure lanyard loop will reach timer knob prior to taping.

- e. (If applicable) Install and tape lanyards.
2. Mk 58 MLM (Figure 13-2).

- a. Exterior not damaged.

**CAUTION**

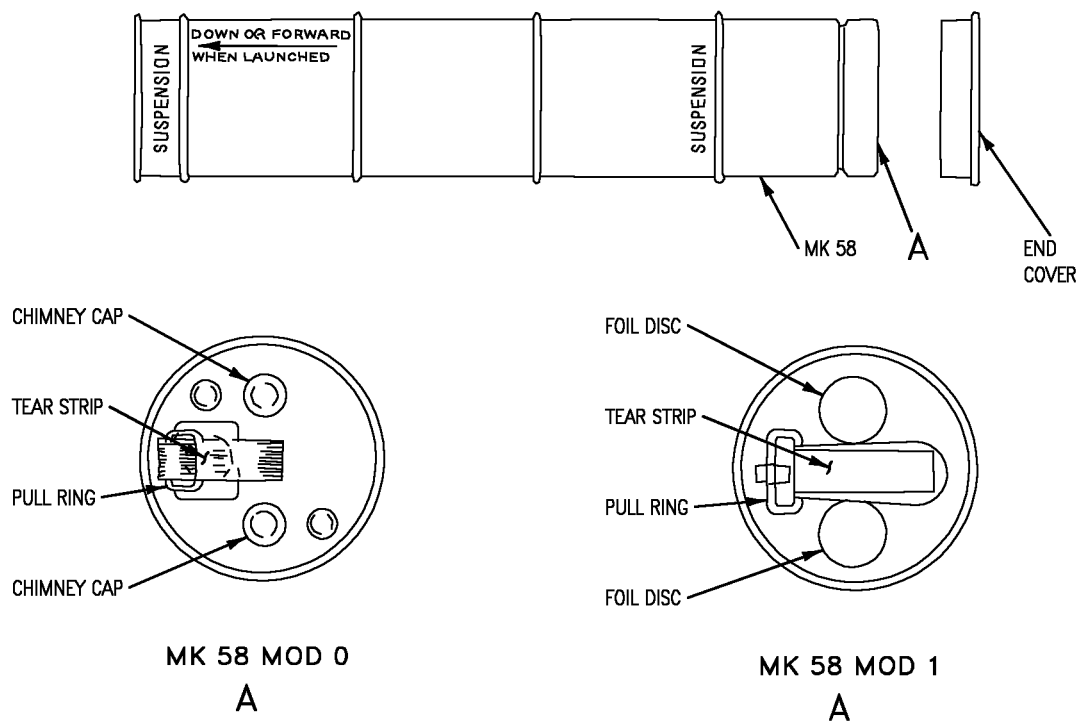
(Mk 58 Mod 0) End cover removal leaves sharp ends.

- b. Remove and retain end cover.

**CAUTION**

Do not remove battery cavity tear strips, foil disks or chimney caps.

- c. Verify battery cavity tear strips and pull ring in place and not damaged.



**Figure 13-2. Mk 58 Marine Location Marker Inspection**

- d. Verify chimney caps or foil disks in place and not damaged.
- e. Ensure breakaway suspension bands (BASB) are available and not damaged.
- f. Install single brass arming wire on BASB adjustment screw.

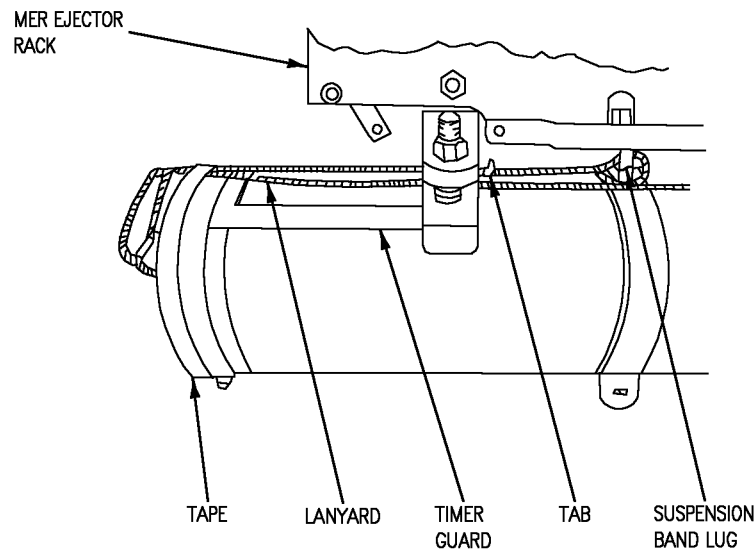
### **13-10. WEAPON LOADING.**

13-11. **MER/BRU-41 PREPARATION.** Prepare MER/BRU-41 for loading as follows:

1. Verify that Aircraft Preparation/Inspection (Paragraph 13-6) and Weapon Inspection (Paragraph 13-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. Position handling equipment with pyrotechnics near station to be loaded and secure.
5. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

13-12. **MER/BRU-41 LOADING.** Load MER/BRU-41 as follows:

1. LUU-2/LUU-19 flare (Figure 13-3).



**Figure 13-3. LUU-2/LUU-19 Flare Loading**

**CAUTION**

Exercise care during loading to prevent damage to tab on timer guard.

Tab on timer guard must be positioned behind swaybrace adapter bracket during loading.

**NOTE**

If at anytime during loading, the timer is accidentally activated do not remove guard from timer. Place hand over timer to prevent the timer from falling off when it releases. After release, hold timer and cut cord connecting the timer assembly to the parachute package and remove spring and timer. Tape the end of the flare to retain parachute pack. Discard spring and timer. Contact EOD personnel to dispose of the flare.

- a. Position flare suspension lugs in suspension hooks with timer guard tab behind swaybrace adapter and latch hooks.
- b. Gently shake flare to ensure flare is supported by suspension hooks.
- c. Position safety stop lever to LOCKED (Paragraph 5-17).

**NOTE**

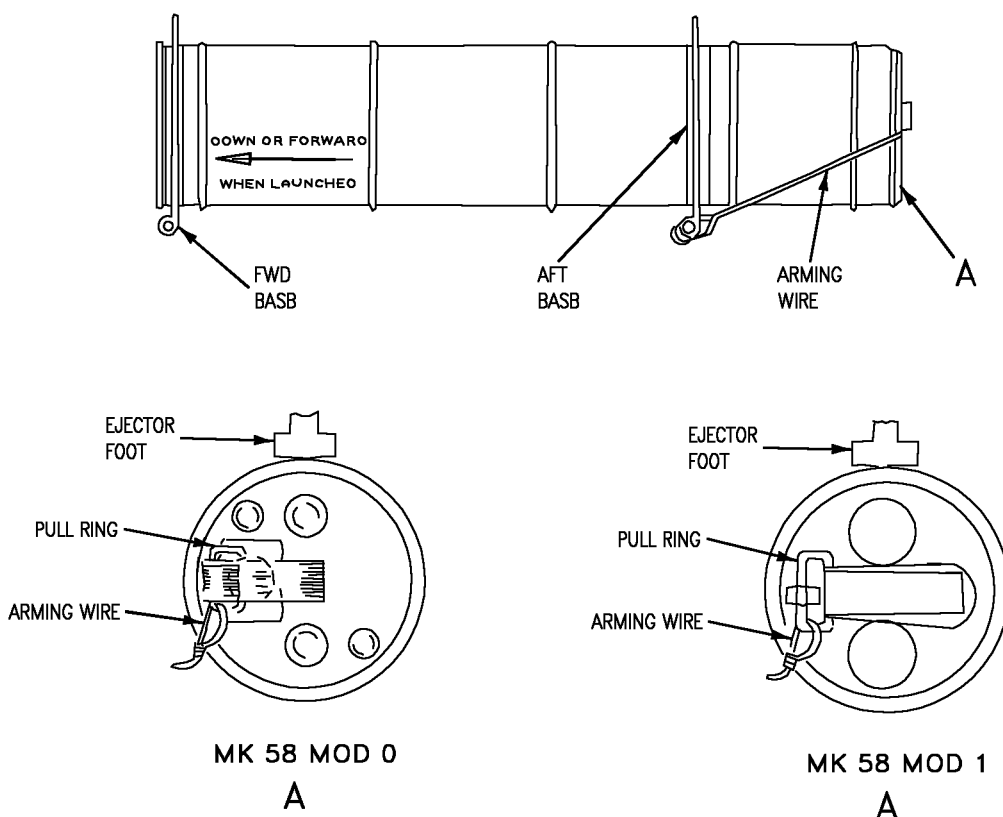
Improper tightening of swaybrace screws may result in hung ordnance.

- d. Adjust swaybraces (Paragraph 5-18).
- e. Position ejector foot against flare.
- f. Attach arming lanyard to aft arming unit.

**CAUTION**

When positioning the timer knob to SAFE or 500 foot setting, exercise care not to exceed pegs or clock will run down, releasing timer from flare housing.

- g. Set timer knob as directed.
  - h. Insert lanyard loop into timer knob and ensure loop is fully seated behind spring latch.
2. Mk 58 MLM (Figure 13-4).
- a. Attach swivel loop of arming wire to breakaway suspension bands (BASB).



**Figure 13-4. Mk 58 Marine Location Marker Loading**



**NOTE**

Steps b and c may be performed in reverse order if desired.

- b. Position MLM in BASBs.
- c. Position BASBs in suspension hooks and latch hooks.
- d. Gently shake MLM to ensure it is supported by the suspension hooks.
- e. Position safety stop lever to LOCKED (Paragraph 5-17).
- f. Align and tighten BASBs.

**NOTE**

Improper tightening of swaybrace screws may result in hung ordnance.

- g. Adjust swaybraces (Paragraph 5-18).
  - h. Position ejector foot against MLM.
  - i. Attach arming wire to pull ring.
- 3. Verify that MER/BRU-41 suspension hooks are open on unloaded MER/BRU-41 stations.
  - 4. Verify that BRU-32 suspension hooks are open on unloaded stations.
  - 5. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

**NOTE**

Do not install auxiliary cartridge.

- 6. Install cartridges in all loaded stations and tighten cartridge retainers, auxiliary cartridge cap and MER/BRU-41 breech caps. Auxiliary cartridge not installed (Paragraph 5-24).
- 7. Place WEAPON LOADED sign in cockpit.
- 8. Remove tools and handling/loading equipment from area.

**13-13. POSTLOADING INSPECTION.**

13-14. Perform Postloading Inspection for weapons loaded by verifying the following:

- 1. Position all armament switches in accordance with Table 5-1.
- 2. WEAPON LOADED sign in cockpit.

**Pyrotechnics**

3. Ground safety handles/safety stop levers in LOCKED position on loaded stations.
4. BRU-32 swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks and MER/BRU-41 breech caps. Cartridge retainers and auxiliary cartridge caps tight (all stations). Auxiliary cartridges not installed.
6. BRU-32 suspension hooks are open on unloaded stations.
7. MER/BRU-41.
  - a. Adapter cable installed.
  - b. (MER) Electrical safety pin installed.
  - c. Swaybraces adjusted.
  - d. Ejector foot positioned.
  - e. (MER) Mode selector switch set.
  - f. Suspension hooks are open on unloaded stations.
8. LUU-2/LUU-19.
  - a. Lanyard attached to aft arming unit.
  - b. Flare timer knob set as directed.
  - c. Lanyard loop connected to timer knob.
  - d. Tab on timer guard positioned behind swaybrace adapter bracket.
9. (Mk 58) Arming wire attached to BASB and pull ring.
10. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
11. Tools and handling/loading equipment removed from area.
12. Report status of aircraft to proper authority.

**13-15. PRIOR TO LAUNCH.**

13-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

13-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

13-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Aircrew must place both hands in full view at all times during arming.

1. Notify aircrew of intention to arm aircraft.
2. (MER) Remove electrical safety pin(s).
3. Position MER/BRU-41 safety stop levers to UNLOCKED.
4. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

13-19. **ARMING AREA.** There are no procedures to be performed for pyrotechnics in the arming area.

**13-20. AFTER LANDING OR GROUND ABORT.**

13-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

13-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

13-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for pyrotechnics in the dearming area.

13-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

(LUU-2/LUU-19) A gap between the timer and the flare cases indicates that the timer has actuated.

2. (MER) Install electrical safety pin(s).
3. (If applicable) Position MER/BRU-41 safety stop levers to LOCKED.
4. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

**Pyrotechnics**

5. (If applicable) Place WEAPON LOADED sign in cockpit.
6. (LUU-2/LUU-19) Ensure timer is locked on the flare case.
7. (If applicable) Remove lanyard(s) from empty stations.
8. Report status of aircraft to proper authority.

13-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 13-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 13-6).
  - b. Perform Weapon Inspection for weapons to be loaded (Paragraph 13-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 13-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 13-6).
  - b. Perform Weapon Inspection (Paragraph 13-8).
4. Perform Postloading Inspection (Paragraph 13-13).
5. Perform Prior to Launch Procedures (Paragraph 13-15).

**13-26. WEAPON UNLOADING.**

13-27. **MER/BRU-41 PREPARATION.** Prepare MER/BRU-41 for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle/safety stop levers are in the LOCKED position on all loaded stations.
6. (BRU-32) Remove cartridge retainers, auxiliary cartridge cap and cartridges.

7. MER/BRU-41.
  - a. (MER) Verify electrical safety pin installed.
  - b. Disconnect breech caps and remove cartridges.
  - c. Retract ejector foot and swaybraces.
8. LUU-2/LUU-19 Flare.

**WARNING**

A gap between the timer and the flare case indicates that the timer has been actuated.

- a. Ensure timer is locked on the flare case.
- b. Disconnect lanyard from timer knob.

**CAUTION**

When positioning the timer knob to SAFE or 500 foot setting, exercise care not to exceed pegs or clock will run down, releasing timer from flare housing.

- c. Rotate timer knob to SAFE.
    - d. Disconnect arming lanyard from aft arming unit.
  9. (Mk 58 MLM) Disconnect arming wire from pull ring.
  10. Position handling equipment near station to be unloaded.
- 13-28. **MER/BRU-41 UNLOADING.** Unload MER/BRU-41 as follows:

**NOTE**

(LUU-2/LUU-19) If at anytime during unloading, the timer is accidentally activated, do not remove guard from timer. Place hand over timer to prevent the timer from falling off when it releases. After release, hold timer and cut cord connecting the timer assembly to the parachute package and remove spring and timer. Tape the end of the flare to retain parachute pack. Discard spring and timer. Contact EOD personnel to dispose of the flare.

1. Manually support flare/MLM and position MER/BRU-41 safety stop lever to UNLOCKED.
2. Pull manual release lever to open suspension hooks (Paragraph 5-16).
3. Remove flare/MLM from rack and place on handling equipment.

**Pyrotechnics**

4. Reinstall and tighten cartridge retainers, auxiliary cartridge cap and MER/BRU-41 breech caps.
5. Set proper code input in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
6. Secure access doors and panels.
7. (If applicable) Remove/stow WEAPON LOADED sign.
8. Remove weapons and handling equipment from area.

## SECTION XIV PRACTICE BOMBS

### 14-1. INTRODUCTION.

14-2. This section contains loading and unloading information for the practice bombs listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

#### NOTE

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

Mk 76  
Mk 106  
BDU-33D/B  
BDU-48/B  
Laser Guided Training Round (LGTR)

### 14-3. ARMAMENT SUPPORT EQUIPMENT (ASE).

14-4. ASE authorized for loading practice bombs is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

14-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

### 14-6. AIRCRAFT PREPARATION/INSPECTION.

14-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, Paragraph 5-14, and as follows:

1. Verify BRU-32 swaybraces are properly seated against MER/BRU-41.
2. Verify adapter cable installed (Figure 3-7).

#### NOTE

SEE IRAC #21

Laser Guided Training Rounds are only authorized for carriage on MER/BRU-41 stations 1 and 2 or individually on MER/BRU-41 station 1.

3. (MER/BRU-41) Verify suspension hooks are open on stations to be loaded.
4. (MER) Electrical safety pin installed (Paragraph 5-17).
5. (MER) Set mode selector switch as directed.

**NOTE**

Ejector foot must be removed when practice bomb/LGTR restrictor is installed.

6. (As applicable) Install restrictor and swaybrace adapter brackets (Paragraph 5-15).
7. (As applicable) Preset swaybraces (Paragraph 5-14 or 5-15).
8. Retract swaybraces; lock jamnuts on stations not being loaded.

**14-8. WEAPON INSPECTION.**

14-9. Reject practice bomb/LGTR and notify proper authority if inspection reveals bomb/LGTR is not acceptable for loading. Inspect practice bombs/LGTR for loading as follows:

1. Practice bombs (Figure 14-1):
  - a. Inspect practice bomb for damage.
  - b. Suspension lug installed and aligned.
  - c. Ensure that practice bomb signal cartridge is installed.
  - d. Ensure that firing pin assembly and cotter pin are installed in all practice bombs to be loaded.
  - e. (BDU-33) Ensure that safety block is installed on the firing pin assembly.
2. LGTR (Figure 14-2):

**WARNING**

Ejector rod is under 340 pounds of pressure.

- a. Inspect LGTR for damage.

**CAUTION**

LGTR with a fully extended ejector rod (approximately 1 1/2 inch), will be considered a dud and rejected.

- b. Ensure ejector rod not fully extended; wing nut and cotter pin installed.
- c. Ensure that signal cartridge is installed and properly retained.
- d. Set laser code selector to the prebriefed code position.
- e. Guidance and Control Unit.
  - (1) Remove detector cover and seeker support packing.



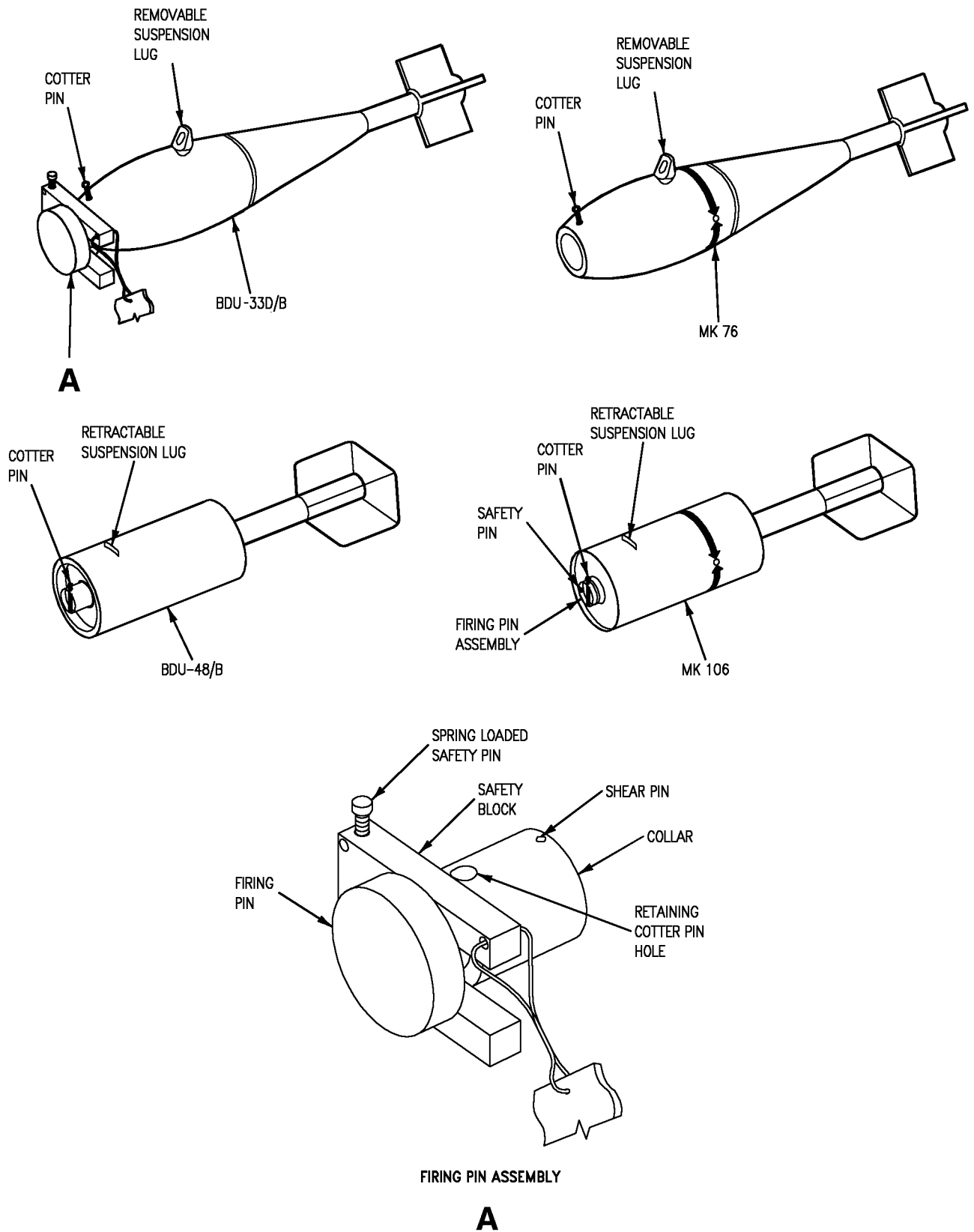
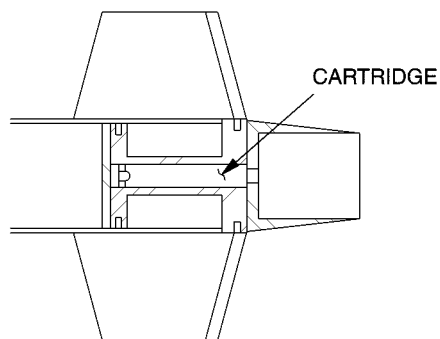
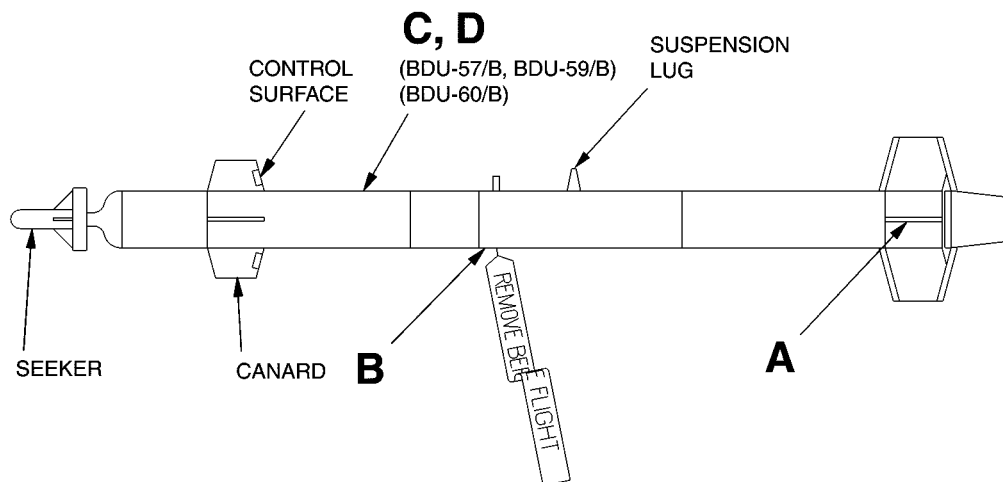


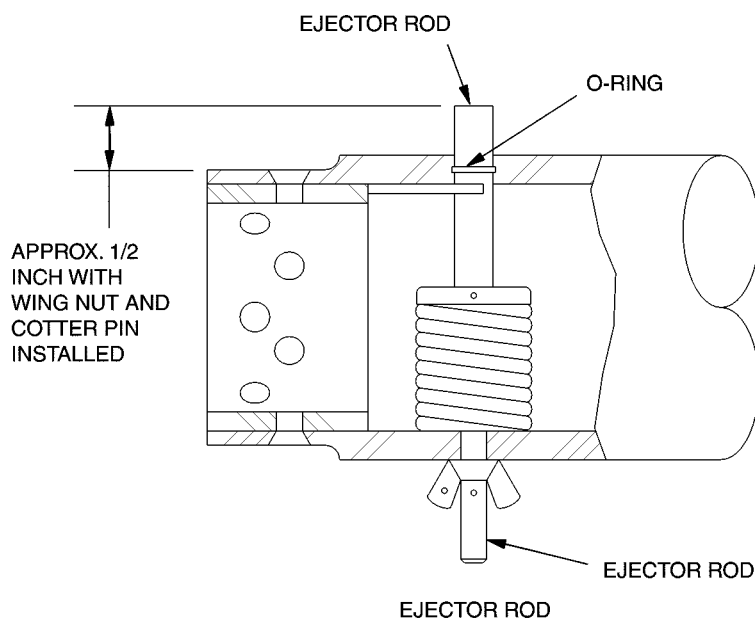
Figure 14-1. Practice Bomb Inspection

**A1-F18AE-LWS-000**  
**Practice Bombs**



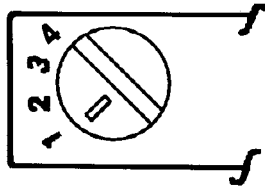
MK 4 MODS OR CXU-3A/B-2

**A**



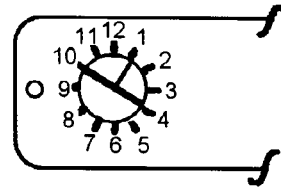
**B**

**Figure 14-2. Laser Guided Training Round (LGTR) Inspection (Sheet 1 of 2)**



CODE SWITCH DESIGNATION	
POSITION 1	CODE 1688
POSITION 2	CODE 1631
POSITION 3	CODE 1644
POSITION 4	CODE 1658

**BDU-57 S/N 4999 AND BELOW**



LASER CODE SWITCH DESIGNATION			
POSITION	CODE	POSITION	CODE
1	1688	7	1715
2	1631	8	1722
3	1644	9	1743
4	1658	10	1755
5	1667	11	1762
6	1676	12	1776

**BDU-57 S/N 5000 AND ABOVE  
AND BDU-59**

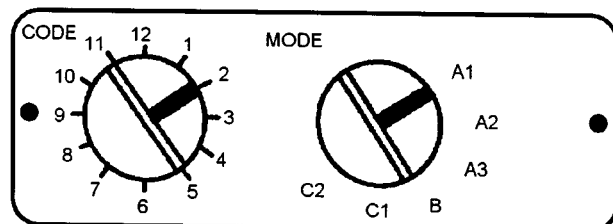
## C

**LASER CODE SELECTOR SWITCH BDU-57 AND BDU-59**

LASER CODE SWITCH DESIGNATION			
POSITION	CODE	POSITION	CODE
POS 1	1688	POS 7	1715
POS 2	1631	POS 8	1722
POS 3	1644	POS 9	1743
POS 4	1658	POS 10	1755
POS 5	1667	POS 11	1762
POS 6	1676	POS 12	1776

### MODE SWITCH DESIGNATION

POSITION A1: HIGH LEVEL RELEASE (SHORT)  
POSITION A2: HIGH LEVEL RELEASE (MED)  
POSITION A3: HIGH LEVEL RELEASE (LONG)  
POSITION B: LEVEL RELEASE (MED ALT)  
POSITION C1: POINT & SHOOT WITH G-BIAS  
POSITION C2: POINT & SHOOT W/O G-BIAS



## D

**LASER CODE AND MODE SELECTOR SWITCH BDU-60**

**Figure 14-2. Laser Guided Training Round (LGTR) Inspection (Sheet 2)**

**Practice Bombs**

- (2) Verify detector dome is clean and not damaged.
- (3) Verify detector moves freely.
- (4) Install detector cover with seeker support packing.

**NOTE**

The control surfaces and canards may move slightly with some resistance.

- (5) Verify canards and control surfaces not damaged.

**NOTE**

Suspension lug shall be bottomed, then backed out no more than one half turn to align.

- f. Ensure suspension lug installed and aligned.

**14-10. WEAPON LOADING.**

14-11. **MER/BRU-41 PREPARATION.** Prepare MER/BRU-41 for loading as follows:

1. Verify that Aircraft Preparation/Inspection (Paragraph 14-6) and Weapon Inspection (Paragraph 14-8) have been completed.
2. (If applicable) Verify that power is removed from aircraft.
3. Verify that aircraft is grounded.
4. Position all armament switches in accordance with Table 5-1.
5. Position handling equipment with practice bombs/LGTR near station to be loaded and secure.
6. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

14-12. **MER/BRU-41 LOADING.** Load MER/BRU-41 as follows:

**WARNING**

Do not drop practice bomb/LGTR during loading, since the signal cartridge can be detonated.

**NOTE**

Load Mk 76/BDU-33/Mk 106/BDU-48 in forward hook; unused hook must be latched.

Load LGTR in aft hook, unused hook must be latched.

1. Latch unused suspension hook.
2. (Practice bomb) Manually position suspension lug in forward suspension hook and latch hook.
3. (LGTR) Manually position suspension lug in aft suspension hook and latch hook.
4. Gently shake practice bomb/LGTR to ensure store is supported by the suspension hook.
5. Position safety stop lever to LOCKED (Paragraph 5-17).
6. Position suspension lug fully forward in suspension hook.

**NOTE**

Improper tightening of swaybrace screws may result in hung ordnance.

7. Adjust swaybraces (Paragraph 5-18).
8. (Mk 106) Remove and retain safety pin and cotter pin.
9. LGTR (Figure 14-2):

**NOTE**

Ejector rod wing nut requires considerable force to be removed.

Ejector rod must contact restrictor; ejector rod O-ring may extend no more than 1/4 inch above LGTR body.

- a. Remove ejector rod cotter pin and wing nut.
  - b. Ensure ejector rod is positioned against restrictor.
10. Verify that BRU-32 suspension hooks are open on unloaded stations.
  11. Verify that MER/BRU-41 suspension hooks are open on unloaded MER/BRU-41 stations.
  12. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

**NOTE**

Do not install auxiliary cartridge.

13. Install cartridges in all loaded bomb racks and tighten cartridge retainers, auxiliary cartridge cap and MER/BRU-41 breech caps. Auxiliary cartridge not installed (Paragraph 5-24).
14. Place WEAPON LOADED sign in cockpit.
15. Remove tools and handling equipment from area.

**14-13. POSTLOADING INSPECTION.**

14-14. Perform Postloading Inspection for practice bombs/LGTR loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles/safety stop levers in LOCKED position on loaded stations.
4. BRU-32 swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks. MER/BRU-41 breech caps, cartridge retainers and auxiliary cartridge caps tight. Auxiliary cartridges not installed.
6. BRU-32 suspension hooks are open on unloaded stations.
7. MER/BRU-41:
  - a. Adapter cable installed.
  - b. (MER) Electrical safety pin installed.
  - c. (MER) Mode selector switch set.
  - d. Swaybraces adjusted.
  - e. Suspension hooks are open on unloaded stations.
8. BDU-33/48, Mk 76/106:
  - a. Bomb lug fully forward in suspension hook.
  - b. (BDU-33) Safety block installed.
  - c. (Mk 106) Safety pin and cotter pin removed.
9. LGTR:
  - a. Ejector rod cotter pin and wing nut removed; ejector rod positioned against restrictor.
  - b. Laser code selector set as directed.
  - c. Detector cover and seeker support packing installed.
  - d. Signal cartridge installed and properly retained.
10. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
11. Tools and handling equipment removed from area.
12. Report status of aircraft to proper authority.

**14-15. PRIOR TO LAUNCH.**

14-16. Prior to launch procedures are performed in the rearming area before engine turnup, and in the arming area. Perform prior to launch procedures as follows:

14-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.
3. (LGTR) Remove detector cover and seeker support packing.

14-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Aircrew must place both hands in full view at all times during arming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to arm aircraft.

**WARNING**

Use extreme care when removing the safety block and moving in and around the BDU-33. Striking the nose of BDU-33 could discharge the signal cartridge.

3. (BDU-33) Remove safety block.
4. (MER/TER) Remove electrical safety pin(s).
5. Position safety stop lever(s) to the UNLOCKED position.
6. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

14-19. **ARMING AREA.** There are no procedures to be performed for practice bombs in the arming area.

**14-20. AFTER LANDING OR GROUND ABORT.**

14-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

14-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

14-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for practice bombs in the dearming area.

**Practice Bombs**

14-24. **DEARMING OR REARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

Aircrew must place both hands in full view at all times during hot refueling/unloading.

**NOTE**

Hot refueling of aircraft loaded with practice bombs/LGTR may be conducted, provided the following safing requirements are complied with.

Unless hot refueling of aircraft with practice bombs/LGTR loaded or downloading of unexpended practice bombs with engines operating is to be conducted, there are no procedures to be performed in the dearming area.

The LGTR will not be unloaded with engines running.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to hot refuel or unload practice bombs.
3. Position all armament switches in accordance with Table 5-1.

**WARNING**

If any component is missing, loose, damaged, hung or otherwise unsafe, do not hot refuel or unload practice bombs with engines operating.

4. Verify ground safety handles in LOCKED position on loaded stations.

**WARNING**

Use extreme care when replacing the safety block and moving in and around the BDU-33. Striking the nose of BDU-33 could discharge the signal cartridge.

5. Position safety stop lever(s) to LOCKED position.
6. (MER/TER) Install electrical safety pin(s).
7. (BDU-33) Install safety blocks.
8. (Mk 106) Install safety pins and cotter pins.



**NOTE**

If hot refueling, indicate to aircrew that aircraft is safe.

Unloading of practice bombs with engines operating may be performed but must be held to a minimum consistent with operational requirements.

9. Ground aircraft (Paragraph 5-5).
10. Remove cartridges from MER/BRU-41; reconnect and tighten breech caps.
11. Retract swaybraces and lock jamnuts.

**WARNING**

Do not drop practice bomb during unloading, since practice bomb signal can be detonated.

12. Manually support practice bomb and position safety stop lever to UNLOCKED.
13. Pull manual release lever to open suspension hooks (Paragraph 5-16).
14. Remove practice bomb and place on handling equipment.
15. Remove bombs and handling equipment from area.
16. (As applicable) Perform Prior to Launch procedures.
17. (As applicable) Indicate to aircrew that aircraft is safe/hot refueling complete or practice bombs removed and personnel and equipment are clear.

14-25. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

1. Verify ground safety handles in LOCKED position on all loaded stations.

**WARNING**

Use extreme care when replacing the safety block and moving in and around the BDU-33. Striking the nose of BDU-33 could discharge the signal cartridge.

2. (If applicable) Position safety stop lever(s) to LOCKED position.
3. (MER/TER) Install electrical safety pin(s).

**Practice Bombs**

4. (BDU-33) Install safety block(s).
5. (Mk 106) Install safety pins and cotter pins.
6. (LGTR) Install detector cover and seeker support packing.
7. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

8. (If applicable) Place WEAPON LOADED sign in cockpit.
9. Report status of aircraft to proper authority.

14-26. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort Procedures have been performed (Paragraph 14-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 14-6).
  - b. Perform Weapon Inspection for practice bombs to be loaded (Paragraph 14-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 14-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 14-6).
  - b. Perform Weapon Inspection (Paragraph 14-8).
4. Perform Postloading Inspection Check (Paragraph 14-13).
5. Perform Prior to Launch procedures (Paragraph 14-15).

**14-27. WEAPON UNLOADING.**

14-28. **MER/BRU-41 PREPARATION.** Prepare MER/BRU-41 for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle/safety stop levers are in the LOCKED position on all loaded stations.

6. (BRU-32) Remove cartridge retainers, auxiliary cartridge cap and cartridges.
7. MER/BRU-41:
  - a. (MER) Verify electrical safety pin installed.
  - b. Disconnect breech caps and remove cartridges.
8. (BDU-33) Verify safety block installed.
9. (Mk 106) Verify safety pin and cotter pin installed.

**CAUTION**

Unloading without ejector rod wing nut installed will dud LGTR.

10. (LGTR) Install ejector rod wing nut and cotter pin; ejector rod fully retracted.
  11. Position handling equipment near station to be unloaded.
  12. (MER/BRU-41) Retract swaybraces.
- 14-29. **MER/BRU-41 UNLOADING.** Unload MER/BRU-41 as follows:

**WARNING**

Do not drop practice bomb/LGTR during unloading, since practice bomb signal can be detonated.

1. Manually support practice bomb/LGTR and position MER/BRU-41 safety stop lever to UNLOCKED.
2. Pull manual release lever to open suspension hooks (Paragraph 5-16).
3. Remove practice bomb/LGTR and place on handling equipment.
4. Reinstall and tighten cartridge retainers, auxiliary cartridge cap and MER/BRU-41 breech caps.
5. Set proper code input in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
6. Secure access doors and panels.
7. (If applicable) Remove/stow WEAPON LOADED sign.
8. Remove weapons and handling equipment from area.



**SECTION XV**  
**FUEL TANKS/EXTERNAL BAGGAGE CONTAINER**

**15-1. INTRODUCTION.**

15-2. This section contains loading and unloading information for the fuel tanks listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

FPU-6/A 315 Gallon External Fuel Tank  
FPU-8/A 330 Gallon External Fuel Tank  
CNU-188 External Baggage Container (EBC)

**15-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

15-4. ASE authorized for loading fuel tanks is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

15-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific load being performed are mandatory for use and include.

1. Torque wrench in-lb.

**15-6. AIRCRAFT PREPARATION/INSPECTION.**

15-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

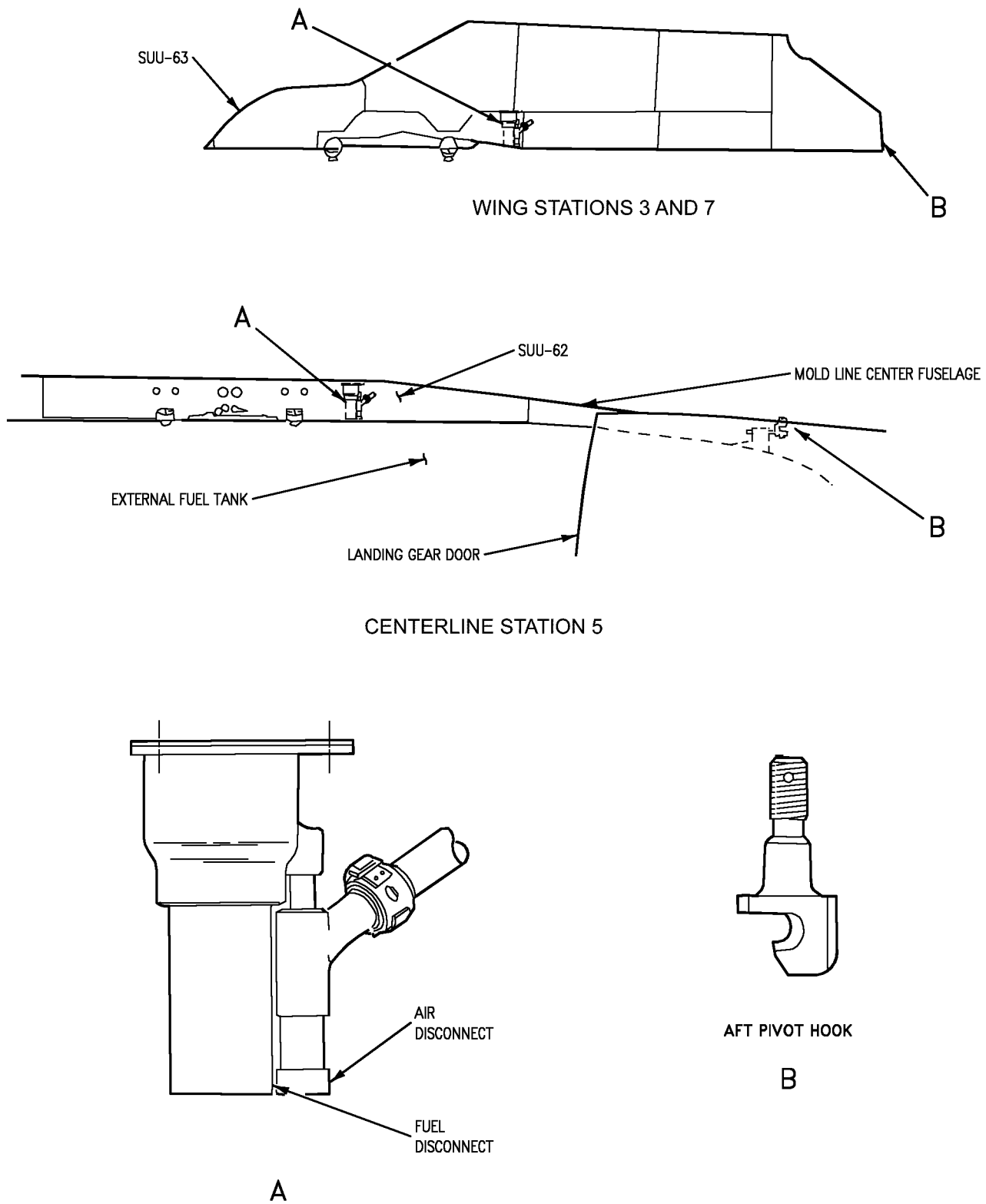
1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. Install adapter cables (Paragraph 3-9 and Figure 3-8 or 3-9).
4. Visually inspect pylon fuel and air disconnect valves and lines for obstructions (Figure 15-1).
5. Visually inspect aft pivot hook for damage and security.

**15-8. STORE INSPECTION.**

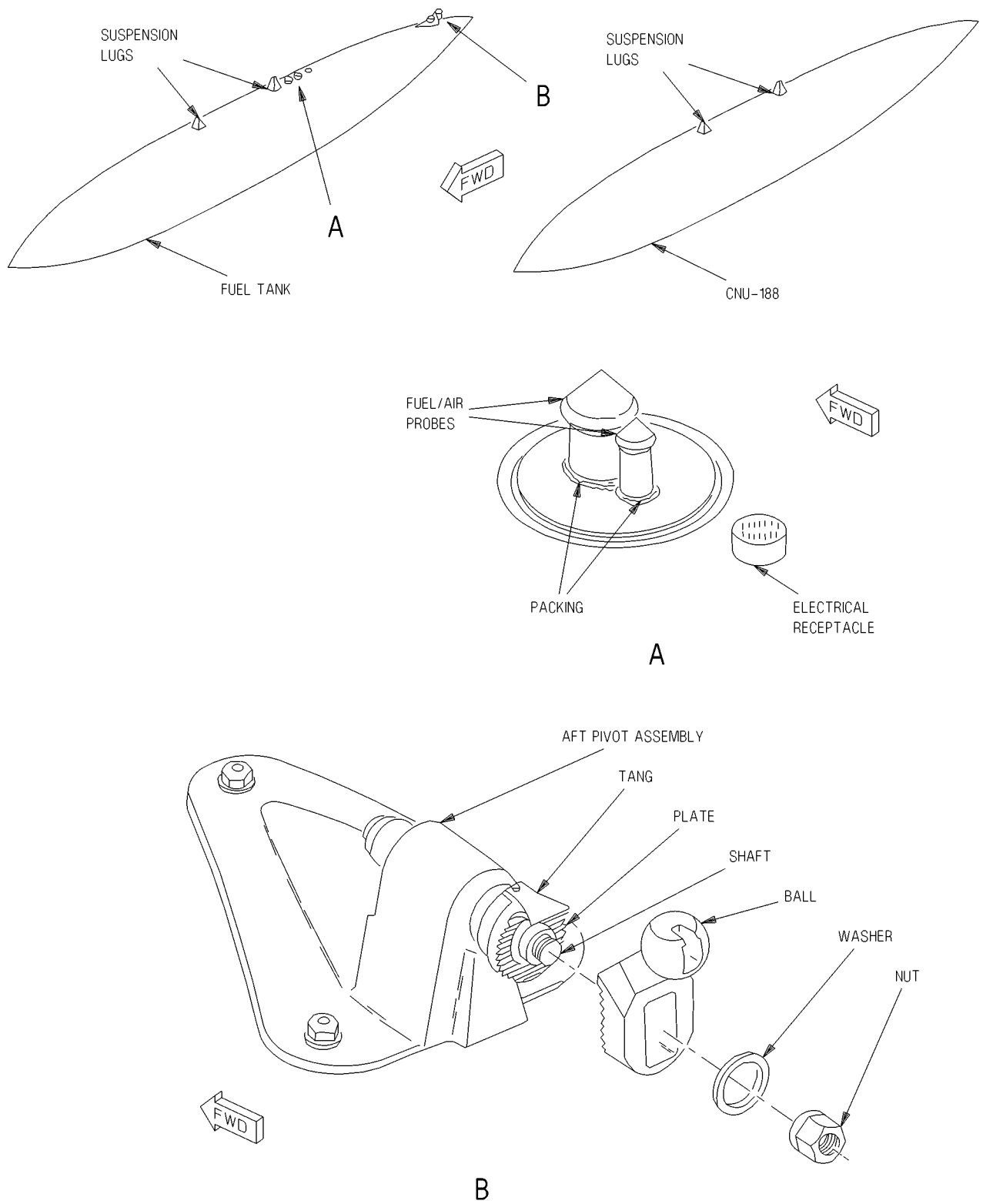
15-9. Reject tank/CNU-188 and notify proper authority if inspection reveals tank/CNU-188 is not acceptable for loading. Inspect tank/CNU-188 for loading as follows (Figure 15-2):

1. Fuel Tanks:
  - a. Tank is assembled and not damaged.

**A1-F18AE-LWS-000**  
**Fuel Tanks/External Baggage Container**



**Figure 15-1. Stations 3, 5 and 7 Inspection**



**Figure 15-2. Fuel Tank Inspection**

**Fuel Tanks/External Baggage Container**

- b. Ensure fuel tank has been defueled.
- c. (FPU-6/A) Verify suspension lugs properly aligned.
- d. (FPU-8/A) Adjust suspension lugs as follows:
  - (1) Screw suspension lugs into lug well until lugs bottom out.
  - (2) Screw lugs out one full turn.

**NOTE**

A maximum of one-quarter turn is allowed for lug alignment.

- (3) Align lugs.
  - e. Verify electrical disconnect is clean and undamaged.
  - f. Verify fuel and air probes free from damage.
  - g. Install packing on fuel and air probes. Apply (VV-P-236) technical petrolatum.
  - h. Verify aft pivot assembly properly installed.
  - i. Remove nut and washer on aft pivot assembly shaft and remove aft pivot ball.
2. CNU-188:
- a. CNU-188 is assembled and not damaged.
  - b. Baggage trays and straps installed.
  - c. Access doors and panels secured or available.
  - d. Verify suspension lugs installed and aligned.

**15-10. STORE LOADING.**

15-11. **PREPARATION.** Prepare BRU-32 rack for loading as follows:

- 1. Verify Aircraft Preparation/Inspection (Paragraph 15-6) and Store Inspection (Paragraph 15-8) have been completed.
- 2. Position handling/loading equipment with tank/CNU-188 under station to be loaded and secure.
- 3. (If applicable) Remove weapon tiedown straps securing tank/CNU-188 to handling/loading equipment.



**NOTE**

Landing gear doors must be manually retracted when loading centerline station.

4. (If applicable) Retract landing gear door and hold in position (Paragraph 5-19).
5. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

15-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. Bomb truck/weapon loader loading:
    - a. Fuel tank:
      - (1) Raise forward end of tank until forward suspension lugs enters forward suspension hook and hook latches.
- CAUTION**
- As aft end of tank is raised, position and guide fuel and air probes into pylon disconnects to prevent damage and ensure proper alignment.
- (2) While raising aft end of tank, position and guide fuel and air probes into pylon valve disconnects.
      - (3) Continue raising aft end of tank until aft lug enters suspension hook and hook latches.
  - b. (CNU-188) Raise CNU-188 until both suspension lugs enter BRU-32 suspension hooks and hooks latch.
  - c. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - d. (If applicable) Loosen tiedown straps, lower bomb truck/weapon loader and ensure tank/ CNU-188 is supported by suspension hooks.
  - e. Rotate ground safety handle to the LOCKED position.
  - f. (If applicable) Remove tiedown straps.

**NOTE**

Prior to installing pivot ball ensure plate smooth side and tangs are positioned as in Figure 15-2.

- g. Install aft pivot ball in aft pivot hook and rotate forward into position on tank aft pivot assembly; install washer and nut on aft pivot shaft assembly wrench tight.
      - h. Shake fuel tank/CNU-188 to ensure swaybraces properly seated.

**Fuel Tanks/External Baggage Container**

- i. (Fuel tank) Torque aft pivot ball nut to 700 to 1000 inch-pounds.
2. (If applicable) Lower bomb truck/weapon loader.
3. (Fuel tank) Electrically connect tank.
4. (If applicable) Return landing gear doors to normal position.

**NOTE**

The CNU-188 external baggage container and logistic carriage of fuel tanks on stations 2 and 8 are not authorized for jettison. Do not install cartridges.

5. (Fuel Tank) Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
6. (CNU-188) Install cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
7. Secure access doors and panels.
8. Place WEAPON LOADED sign in cockpit.
9. Remove tools and handling/loading equipment from area.

**15-13. POSTLOADING INSPECTION.**

15-14. Perform Postloading Inspection for tanks/CNU-188 loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.

**CAUTION**

The CNU-188 external baggage container and logistic carriage of fuel tanks on stations 2 and 8 are not authorized for jettison. Do not install cartridges.

5. (Fuel tanks) Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge cap tight.
6. (CNU-188) Cartridges not installed. Cartridge retainers and auxiliary cartridge cap tight (all stations).
7. (Fuel tanks) Tank fuel/air lines and electrical connector connected and secure.

8. Suspension hooks are open on unloaded stations.
9. Verify proper code inputs inserted in Weapons Insertion Panel for stores on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
10. (As applicable) Access doors and panels secure.
11. Tools and handling/loading equipment removed from area.
12. Report status of aircraft to proper authority.

**15-15. PRIOR TO LAUNCH.**

15-16. Prior to Launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform Prior to Launch procedures as follows:

15-17. **REARMING AREA (BEFORE ENGINE TURNUP).** There are no procedures to be performed for fuel tanks in the rearming area. For CNU-188, perform the following:

1. (CNU-188) Access doors and panels secured.

15-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for fuel tanks/CNU-188 in the rearming area.

15-19. **ARMING AREA.** There are no procedures to be performed for fuel tanks/CNU-188 in the arming area.

**15-20. AFTER LANDING OR GROUND ABORT.**

15-21. After landing or ground abort procedures pertain to an aircraft that has returned from a mission with tanks/CNU-188 aboard or to an aircraft with loaded tanks/CNU-188 as a result of a ground abort.

15-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

15-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for fuel tanks/CNU-188 in the dearming area.

15-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position.

<b>WARNING</b>
----------------

If any component is missing, loose, or damaged, notify proper authority.

2. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with fuel tanks/external baggage container a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. Report status of aircraft to proper authority.

15-25. **TURNAROUND.** Turnaround procedures apply to aircraft not requiring reconfiguration. Perform turnaround procedures as follows:

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 15-20).
2. Perform Prior to Launch procedures (Paragraph 15-15).

**15-26. STORE UNLOADING.**

15-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. (As applicable) Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. (Fuel tank) Disconnect adapter cable from tank.

**WARNING**

Fuel tank/CNU-188 must be empty prior to unloading.

**NOTE**

Removal of the fuel tank filler cap is necessary to visually verify that fuel tank is empty.

8. (If applicable) Remove fuel tank filler cap as follows:

**WARNING**

Aviation fuel is flammable, toxic to eyes, skin and respiratory tract. Skin and eye protection is required. Avoid prolonged breathing of fuel vapors.

**NOTE**

Fuel tank air pressure must be completely vented prior to removing filler cap. Allow 5 minutes after engine or APU shutdown before removing filler cap.

- a. Raise cap handle, twist cap counterclockwise.
  - b. Slowly remove filler cap.
  - c. Visually inspect to verify fuel tank is empty.
  - d. Reinstall external fuel tank filler cap, ensuring filler cap arrow is pointing forward, and cap handle is down and flush with cap.
9. (If applicable) Verify CNU-188 is empty.

**NOTE**

Landing gear doors must be manually retracted when unloading centerline station.

10. (If applicable) Retract landing gear door and hold in position (Paragraph 5-19).

<b>CAUTION</b>
----------------

Verify handling/loading equipment is configured to accept tank/CNU-188 being unloaded.

11. Position handling/loading equipment under station to be unloaded and secure.
  12. Bomb truck/weapon loader unloading.
    - a. Raise bomb truck/weapon loader until tank/CNU-188 is supported.
    - b. Secure tank/CNU-188 to handling/loading equipment with tiedown straps.
- 15-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:
1. Bomb truck/weapon loader unloading.
    - a. Remove nut and washer on aft pivot assembly shaft and remove aft pivot ball (Figure 15-2).
    - b. Rotate ground safety handle to UNLOCKED.
    - c. Rotate MANUAL RELEASE to open suspension hooks.

<b>CAUTION</b>
----------------

(Fuel tank) As tank is lowered, guide fuel and air probes out of pylon valve disconnect to prevent damage to probes and disconnects.

**Fuel Tanks/External Baggage Container**

d. (Fuel tank) Lower tank slowly and exercise care to ensure the aft pivot assembly and fuel and air probes do not bind.

e. Lower bomb truck/weapon loader.

2. (Fuel tank) Install aft pivot ball on aft pivot assembly shaft and install washer and nut.
3. Remove handling/loading equipment with tank/CNU-188 from under aircraft.
4. (If applicable) Return landing gear doors to normal position.
5. (As applicable) Install cartridge retainers and auxiliary cartridge caps.
6. (Fuel tanks) Remove adapter cables.
7. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
8. Secure access doors and panels.
9. (If applicable) Remove/stow WEAPON LOADED sign.
10. Remove tank/CNU-188 and handling/loading equipment from area.

## SECTION XVI ECM/ICMDS

### 16-1. INTRODUCTION.

16-2. This section contains loading and unloading information for the countermeasures decoy dispensers listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

#### NOTE

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AN/ALE-29A Dispenser Module  
AN/ALE-47 Dispenser Module

### 16-3. ARMAMENT SUPPORT EQUIPMENT (ASE).

16-4. ASE authorized for loading the AN/ALE-29A or AN/ALE-47 dispenser module is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

16-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to specific weapon and load being performed are mandatory for use and include:

1. Allen Wrench, 5/32-inch.
2. Torque Wrench, in-lb.
3. Proximity Switch Control.

### 16-6. AIRCRAFT PREPARATION/INSPECTION.

16-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. On 161353 thru 163782:
  - a. Open door 10R.
  - b. Open circuit breakers AN/ALE-39 CONT and AN/ALE-39 PWR (Figure 2-8).
2. On 163985 and UP, verify ICM electrical safety switch is extended (SAFE), (Figure 5-1).
3. On 163985 thru 164980, verify that programmers and counters are set as directed. (As applicable) Reset AN/ALE-39 system as follows:

**WARNING**

When handling or loading impulse cartridges, strict compliance with provisions contained in NAVSEA OP 3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010 is mandatory.

Do not reset ALE-39 system with loaded modules installed.

- a. Ensure loaded modules are removed.
- b. Connect electrical power to aircraft.

**WARNING**

Do not connect proximity switch control to aircraft with aircraft launch bar in the down position.

- c. Connect proximity switch control (nose wheelwell).
- d. On 161353 thru 163782, close AN/ALE-39 CONT and AN/ALE-39 PWR circuit breakers.
- e. On 163985 and UP, push ICM electrical safety switch in, turn clockwise to ARM. Ensure safety switch is flush with aircraft skin.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- f. On GND PWR control panel, position EXT PWR switch to RESET and back to NORM. Set and hold switch 3 to A ON for 3 seconds.

**WARNING**

Do not actuate any switches on the proximity switch control except as called for.

- g. Position proximity switch control RIGHT MAIN and NOSE GEAR switches to WT OFF WHLS.
- h. On 161353 thru 163782, on master arm control panel, position MASTER switch to ARM.
- i. On 161353 thru 163782, in nose wheelwell position ARMAMENT OVERRIDE switch to OVERRIDE.
- j. On ECM control panel, position DISPENSER switch to C.
- k. On programmer, pull RESET switch and set to RESET for a minimum of 5 seconds.
- l. On 161353 thru 163175 and 163427 thru 164980, on the antenna select control panel, ALE-39 RESET switch to RESET for a minimum of 5 seconds.



- m. On ECM control panel, position DISPENSER switch to OFF.
  - n. Position proximity switch control, RIGHT MAIN and NOSE GEAR switch to NORM.
  - o. On 161353 thru 163782, on master arm control panel, position MASTER switch to SAFE.
  - p. On GND PWR control panel, position EXT PWR switch to OFF.
  - q. Disconnect/remove proximity switch control.
  - r. Remove electrical power from aircraft.
  - s. On 161353 thru 163782, open AN/ALE-39 CONT and AN/ALE-39 PWR circuit breakers.
  - t. On 163985 and UP, push ICM electrical safety switch in, turn counterclockwise to SAFE. Ensure safety switch is extended (Figure 5-1).
- 4. Verify that dispenser housing plugs and 32 pin connectors are clean and not damaged.
  - 5. On 165171 and UP, verify that dispenser housing plugs and 48 pin connectors are clean and not damaged.
  - 6. Verify that dispenser housing four stud sockets are not damaged.

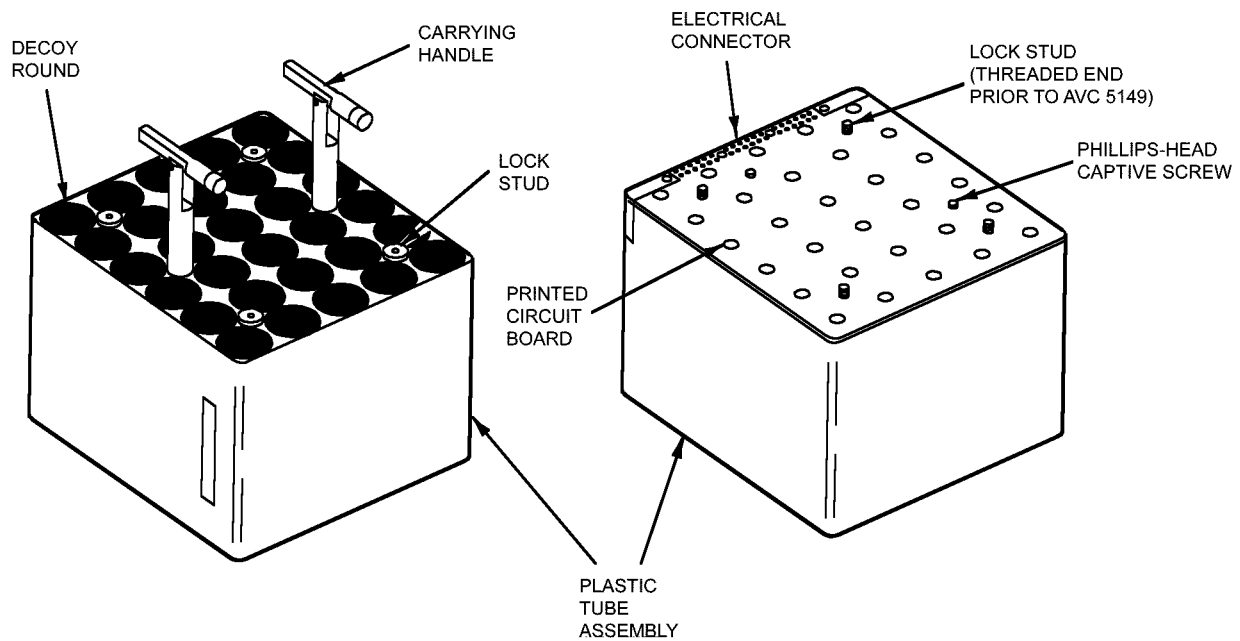
#### **16-8. WEAPON INSPECTION.**

16-9. Reject dispenser and notify proper authority if inspection reveals dispenser module is not acceptable for loading. Inspect dispensers for loading as follows (Figures 16-1 and 16-2):

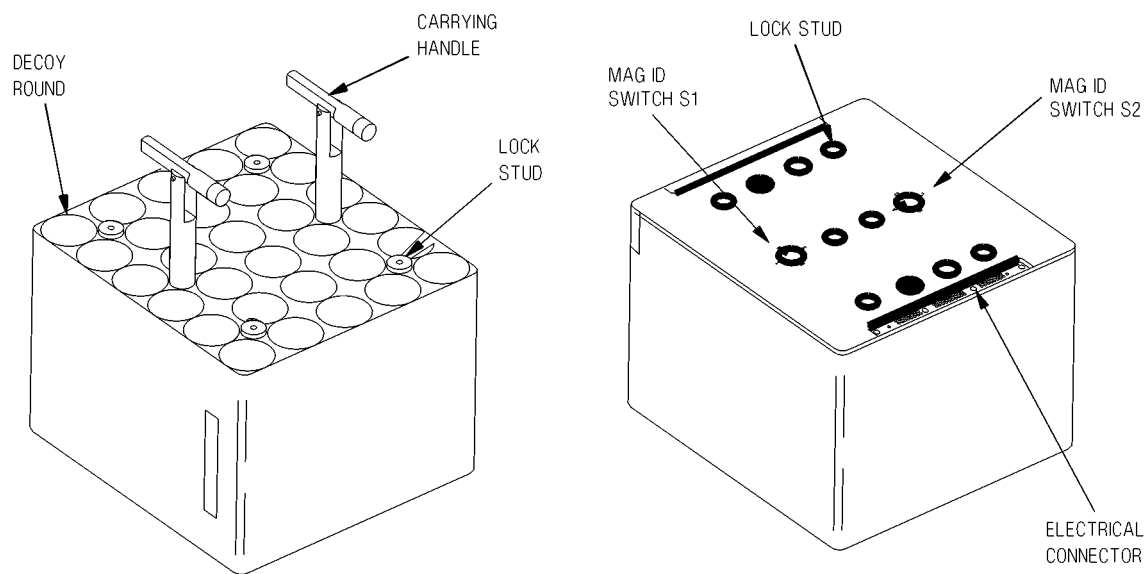
#### **NOTE**

AN/ALE-29A dispenser module modified in accordance with AVC 5149 can only be installed in AN/ALE-39 systems modified with AVC 5149.

- 1. On 163985 thru 164980, AN/ALE-29A dispenser module:
  - a. Ensure that dispenser module is not cracked and no surface dents are deeper than 1/64 inch.
  - b. Ensure that dispenser module is loaded according to operational order.
  - c. Ensure that 32-pin electrical connector and printed circuit board is clean and not damaged.
  - d. Ensure that two phillips-head captive screws that attach printed circuit board to plastic tube assembly are tight.
  - e. Ensure that lock studs and telescoping handles are not damaged.



**Figure 16-1. AN/ALE-29A Dispenser Module Inspection**



**Figure 16-2. AN/ALE-47 Dispenser Module Inspection**

2. On 165171 and UP, AN/ALE-47 dispenser module:
  - a. Ensure that dispenser module is not damaged or cracked.
  - b. Ensure that dispenser module is loaded according to operational order.
  - c. Ensure that MAG ID switches S1 and S2 are set according to operational order.
  - d. Ensure that 48 pin connector and printed circuit board is clean and not damaged.
  - e. Ensure that lock studs and telescoping handles are not damaged.

#### **16-10. WEAPON LOADING.**

16-11. **DISPENSER MODULE PREPARATION.** Prepare aircraft for loading as follows:

1. Verify that Aircraft Preparation/Inspection (Paragraph 16-6) and Weapon Inspection (Paragraph 16-8) have been completed.

#### **WARNING**

Aircraft power must be removed prior to loading dispenser module.

2. Verify power is removed from aircraft.
3. Verify that aircraft is grounded.
4. Position all armament switches in accordance with Table 5-1.

16-12. **DISPENSER MODULE LOADING.** Load AN/ALE-29A or AN/ALE-47 dispenser modules in aircraft as follows:

#### **NOTE**

AN/ALE-29A dispenser module modified in accordance with AVC 5149 can only be installed in AN/ALE-39 systems modified with AVC 5149.

1. On 163985 thru 164980, AN/ALE-29A; Release dispenser module carrying handles.

#### **CAUTION**

The 32 pin connector in dispenser module must align with the 32 pin plug in dispenser housing to prevent damage to electrical connectors.

- a. Raise dispenser unit and align guide holes with dispenser housing guide pins.
- b. Push dispenser module into dispenser housing until the four positive lock studs engage fasteners.

- c. Tighten lock studs finger tight with 5/32-inch allen wrench.

**NOTE**

Progressive torque of lock studs, in an X-pattern, is required to ensure that the printed circuit board is firmly seated with even pressure against the dispenser housing.

- d. (AVC 5149 not incorp.) Torque lock studs in 10 inch-pound increments, using X-pattern, to 55  $\pm$ 5 inch-pounds of torque.

- e. (AVC 5149 incorp.) Torque lock studs in 10 inch-pound increments, using x-pattern, to 70  $\pm$ 5 inch-pounds of torque.

**CAUTION**

Do not use excessive twisting force on dispenser module carrying handles. Twisting force in excess of 40 inch-pounds can cause distortion and failure of handles.

- f. Push spring loaded telescopic handles into dispenser module and turn one fourth turn clockwise, using 5/32-inch allen wrench (Figure 16-2).

- g. Set subtractive counters.

- h. Place WEAPON LOADED sign in cockpit.

2. On 165171 and UP, AN/ALE-47:

- a. Release dispenser module carrying handles.

**CAUTION**

The 48 pin connector in dispenser module must align with the 48 pin plug in dispenser housing to prevent damage to electrical connectors.

- b. Raise dispenser unit and align holes with dispenser housing guide pins.
- c. Push dispenser module into dispenser housing until the four positive lock studs engage fasteners.
- d. Tighten lock studs finger tight with 5/32-inch allen wrench.

**NOTE**

Progressive torque of lock studs, in an X pattern, is required to ensure that the printed circuit board is firmly seated with even pressure against the dispenser housing.

- e. Torque lock studs in 10 inch-pounds increments, using X pattern, to 70 $\pm$ 5 inch-pounds of torque.

**CAUTION**

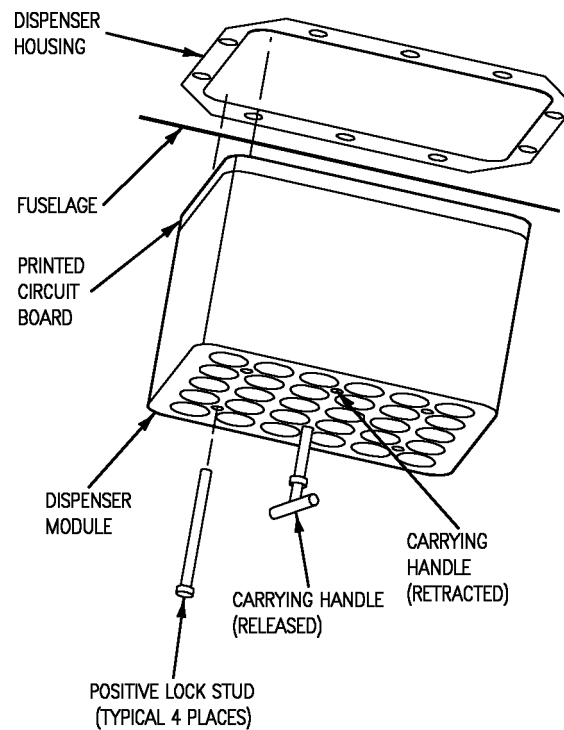
Do not use excessive twisting force on dispenser module carrying handles. Twisting force in excess of 40 inch-pounds can cause distortion and failure of handles.

- f. Push spring loaded telescopic handles into dispenser module and turn one fourth turn clockwise, using 5/32-inch allen wrench (Figure 16-3).
- g. Place WEAPON LOADED sign in cockpit.
- h. Remove tools and handling equipment from area.

**16-13. POSTLOADING INSPECTION.**

16-14. Perform Postloading Inspection for dispensers loaded in aircraft by verifying the following:

- 1. Position all armament switches in accordance with Table 5-1.
- 2. On 163985 and UP, verify ICM electrical safety switch extended (SAFE). (Figure 5-1).
- 3. WEAPON LOADED sign in cockpit.



**Figure 16-3. AN/ALE-29A or AN/ALE-47 Dispenser Module Inspection (Typical)**

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**ECM/ICMDS**

4. On 163985 thru 164980:
  - a. Programmer set according to operational order.
  - b. Subtractive counters set.
5. Dispenser properly installed (T-handle stowed, hexhead screw tight).
6. Tools and handling equipment removed from area.
7. Report status of aircraft to proper authority.

**16-15. PRIOR TO LAUNCH.**

16-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

16-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

**NOTE**

If operational conditions require, rearming area procedures may be performed in the arming area.

1. On 161353 thru 163782, close circuit breakers AN/ALE-39 CONT and AN/ALE-39 PWR (Figure 2-8).
2. On 163985 and UP, push ICM electrical safety switch in, turn clockwise to ARM. Ensure safety switch is flush with aircraft skin.
3. Secure access doors and panels.
4. Remove/stow WEAPON LOADED sign.

16-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for dispensers in the rearming or arming area.

16-19. **ARMING AREA.** There are no procedures to be performed for dispensers in the arming area.

**16-20. AFTER LANDING OR GROUND ABORT.**

16-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or an aircraft with loaded weapons as a result of ground abort.

16-22. **SAFING.** After Landing or Ground Abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

16-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for dispenser in the dearming area before engine shutdown.

16-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position.

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

If decoy round is partially ejected, remain clear. Notify proper authority.

2. Decoy rounds secure.

**NOTE**

If an aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. On 161353 thru 163782:
  - a. Open door 10R.
  - b. Open circuit breakers AN/ALE-39 CONT and AN/ALE-39 PWR (Figure 2-8).
5. On 163985 and UP, push ICM electrical safety switch in, turn counterclockwise to SAFE. Ensure safety switch is extended (Figure 5-1).
6. Position all armament switches in accordance with Table 5-1.
7. On 161353 thru 163175 and 163427 thru 164980, on the antenna select control panel ALE-39 RESET switch is OFF.
8. Report status of aircraft to proper authority.

16-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 16-20).
2. For dispensers to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Weapon Unloading procedures (Paragraph 16-26).
  - b. Perform Aircraft Preparation/Inspection (Paragraph 16-6).
  - c. Perform Weapon Inspection for dispenser(s) to be loaded (Paragraph 16-8).
  - d. Load dispensers in accordance with Weapon Loading procedures (Paragraph 16-10).

3. Retorque dispensers in accordance with (Paragraph 16-12).
4. Perform Postloading Inspection (Paragraph 16-13).
5. Perform Prior to Launch procedures (Paragraph 16-15).

#### **16-26. WEAPON UNLOADING.**

16-27. **DISPENSER MODULE PREPARATION.** Prepare aircraft for unloading as follows:

1. Position aircraft in rearming area.

**WARNING**

Aircraft power must be removed prior to unloading dispenser module(s).

2. Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handles are LOCKED on all loaded stations.
6. On 161353 thru 163782, verify circuit breakers AN/ALE-39 CONT and AN/ALE-39 PWR are open (Figure 2-8).
7. On 163985 and UP, ensure ICM electrical safety switch extended SAFE (Figure 5-1).

16-28. **DISPENSER MODULE UNLOADING.** Unload AN/ALE-29A or AN/ALE-47 dispenser modules from aircraft as follows:

1. Inspect dispenser modules for fully seated decoy/chaff rounds or no decoy/chaff rounds, as applicable.

2. Release two spring loaded telescopic handles on dispenser modules by turning handles one fourth turn counterclockwise, using 5/32-inch allen wrench.

**CAUTION**

Support dispenser module when disengaging lock studs to prevent damage to dispenser module.

3. Disengage lock studs with 5/32-inch allen wrench, using X-pattern.
4. Remove dispenser module from dispenser housing.
5. (If applicable) Install cover panel over dispenser housing.
6. Place dispenser on handling equipment with printed circuit board up.



7. On 161353 thru 163782, close circuit breakers AN/ALE-39 CONT and AN/ALE-39 PWR (Figure 2-8).
8. Secure access doors and panels.
9. Remove dispensers and handling equipment from area.
10. (If applicable) Remove/stow WEAPON LOADED sign.



**SECTION XVII**  
**ROCKET LAUNCHERS**

**17-1. INTRODUCTION.**

17-2. This section contains loading and unloading information for the rocket launchers listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading and that launchers have been checked and loaded with the applicable rockets prior to delivery to the aircraft. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

LAU-10  
LAU-61  
LAU-68

**17-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

17-4. ASE authorized for loading rocket launchers is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

17-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. Aircraft Firing Circuit Test Set AN/AWM-54 or Firing Circuit Test Set AN/AWM-102 with W2 adapter.

**17-6. AIRCRAFT PREPARATION/INSPECTION.**

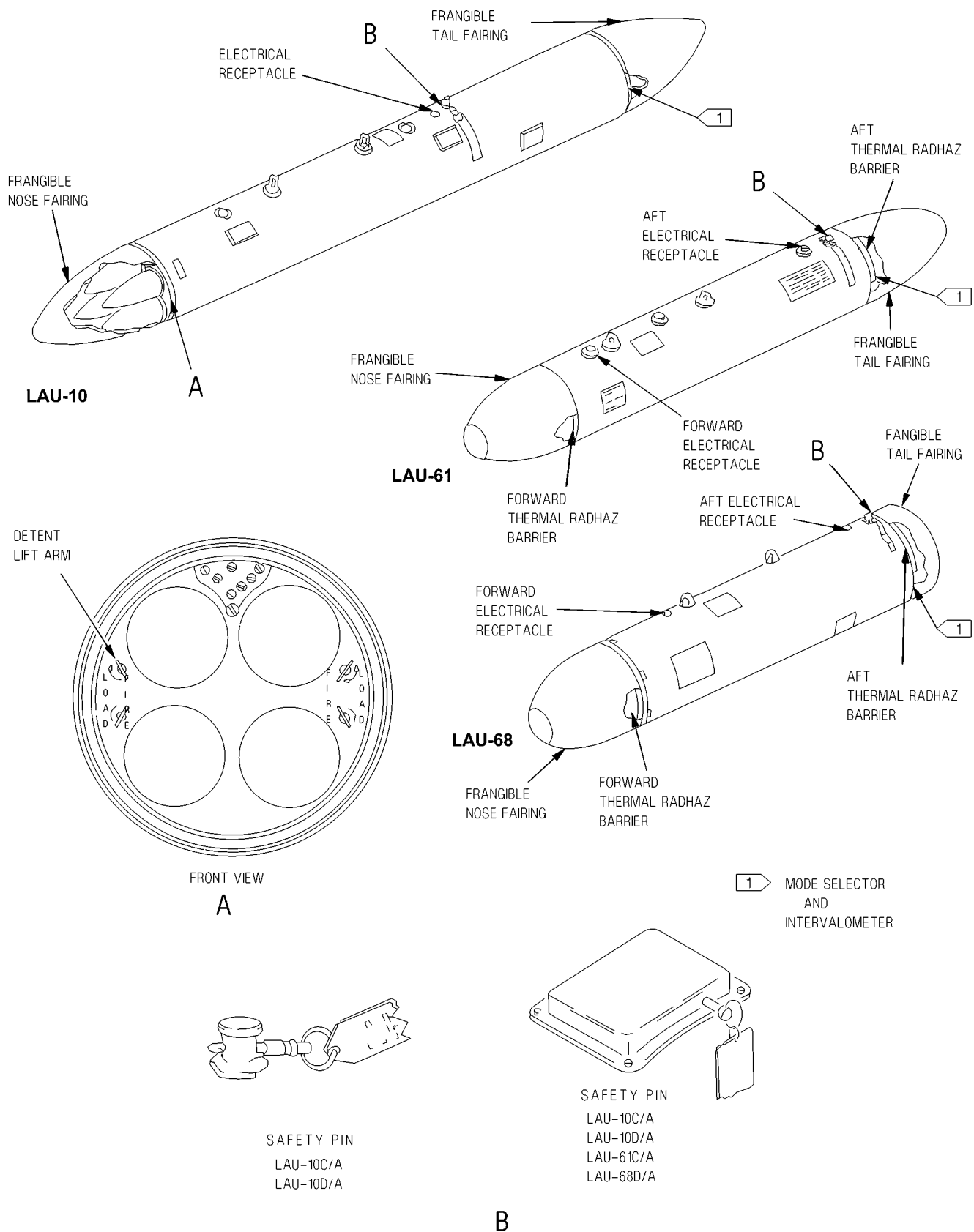
17-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, Paragraph 5-11 and as follows:

1. Verify BRU-32 swaybraces are properly seated against BRU-33.
2. Verify BRU-33 adapter cable installed (Figure 3-5).
3. Verify rocket launcher cable is installed on BRU-33.
4. Ensure suspension hooks are open on stations to be loaded.
5. (LAU-10/61) Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
6. (LAU-68) Ensure swaybraces are inspected and adjusted to the extended position on stations to be loaded (Paragraph 5-10).

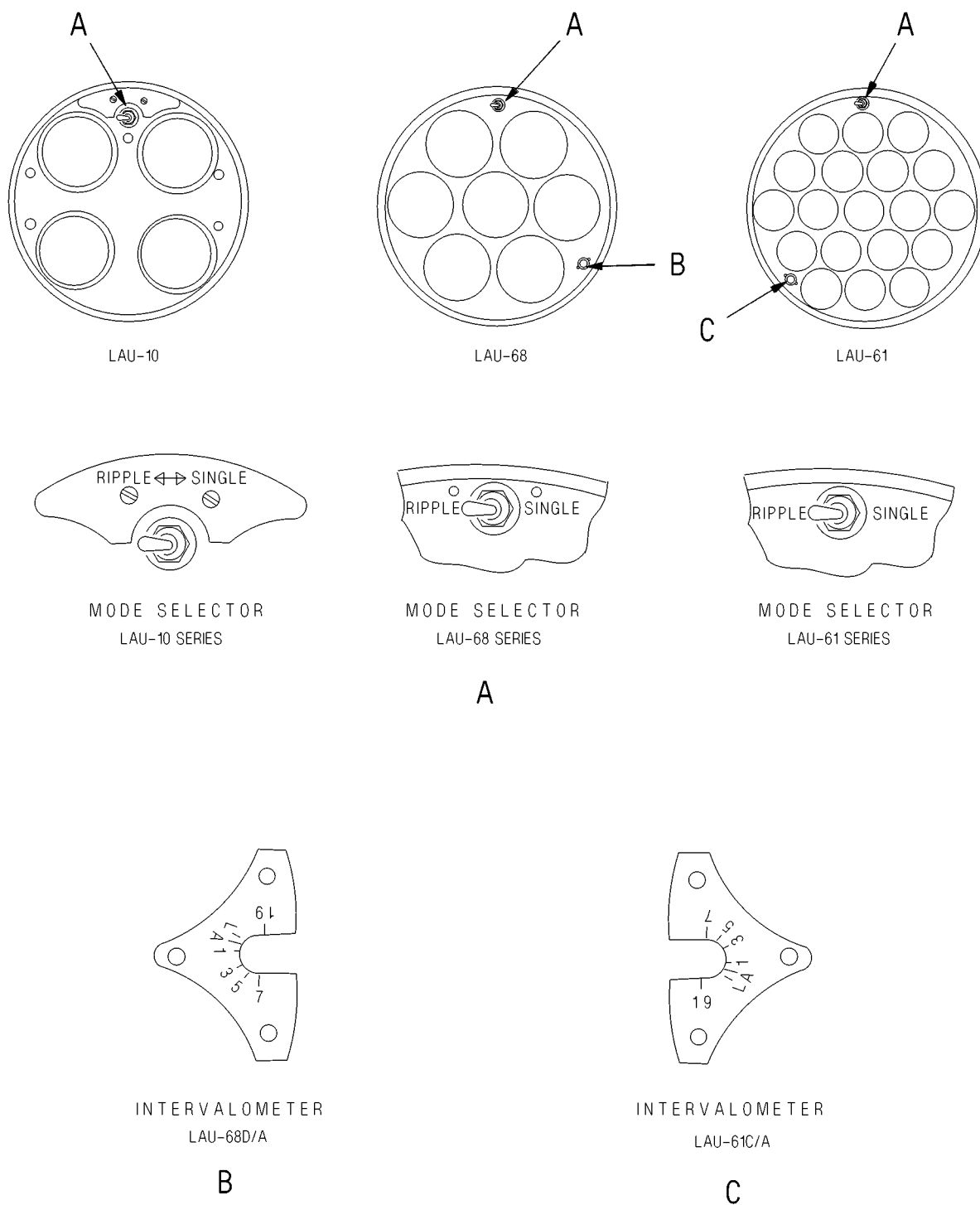
**17-8. WEAPON INSPECTION.**

17-9. Reject launcher and notify proper authority if inspection reveals launcher is not acceptable for loading. Inspect rocket launchers for loading as follows (Figures 17-1 and 17-2):

**A1-F18AE-LWS-000**  
**Rocket Launchers**



**Figure 17-1. LAU-10, LAU-61 and LAU-68 Rocket Launcher Inspection**



**Figure 17-2. Mode Selector and Intervalometer Inspection**

**WARNING**

Do not stand directly in front of or behind launcher.

Only LAU-10 rocket launchers modified in accordance with AAC-837 will be loaded.

Rocket launcher internal inspection, tube loading/unloading, and intervalometer or fuze installation/removal will not be performed with launcher installed on the aircraft.

1. Verify that safety pin is installed.
2. Inspect launcher for dents, severe scratches and cracks.
3. Verify that suspension lugs are installed with base of lug eye flush with launcher surface and aligned.
4. Set mode selector switch as directed.
5. (If applicable) Verify that frangible fairings are available and not damaged.
6. (If applicable) Verify that fuzes are installed and not damaged.
7. (If applicable) Verify all rockets are in full aft position and latched in place.
8. LAU-61/LAU-68:
  - a. Set intervalometer switch to A position.

**WARNING**

(LAU-61/68) Thermal/RADHAZ barriers are required for shipboard operations. Forward barrier is optional when using inert warheads.

- b. (If applicable) Thermal/RADHAZ barriers installed.
  - c. Remove dust covers from forward and aft electrical receptacles and ensure that contact pins are not bent, broken, or corroded. Reinstall dust covers.
9. LAU-10:
  - a. Verify detent lift arms are in FIRE position.
  - b. (Mk 84 chaff head) Safety pins removed and fuzes set on SAFE.
  - c. (LAU-10D/A, Shipboard) Thermal shield installed.
  - d. Remove dust cover from aft electrical receptacle and ensure that contact pins are not bent, broken, or corroded. Reinstall dust cover.

## **17-10. WEAPON LOADING.**

17-11. **BRU-33 RACK PREPARATION.** Prepare BRU-33 for loading as follows:

1. Verify that Aircraft Preparation/Inspection (Paragraph 17-6) and Weapon Inspection (Paragraph 17-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with weapon under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33):
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of launcher to steady launcher while hoisting.
  - d. Remove weapon tiedown straps securing launcher to handling equipment.
7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

17-12. **BRU-33 LOADING.** Load BRU-33 as follows:

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise launcher until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates locked (Paragraph 5-17).

### **NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until launcher is supported by bomb rack suspension hooks.
- d. Gently shake launcher to ensure launcher is supported by bomb rack suspension hooks and swaybraces are properly seated.

**Rocket Launchers**

- e. Rotate ground safety handle to the LOCKED position.
- f. Remove weapon tiedown straps.
2. (If applicable) Bomb hoist loading:
  - a. Hoist launcher until both suspension lugs enter rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates locked (Paragraph 5-13).
  - c. Ease hoist cable until launcher weight is supported by bomb rack suspension hooks.
  - d. Gently shake launcher to ensure launcher is supported by the bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.
4. (Mk 84 Chaff head) Set fuze as directed.

**WARNING**

Do not electrically connect rocket launcher until directed.

5. (If applicable) Install forward/aft fairing on launchers as follows:
  - a. Align arrow on fairing with unlock arrow on launcher.
  - b. Slide fairing on launcher and rotate fairing clockwise until fairing latch spring snaps into lock position.
6. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).
7. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).
8. Place WEAPON LOADED sign in cockpit.
9. Remove tools and handling/loading equipment from area.

**17-13. POSTLOADING INSPECTION.**

17-14. Perform Postloading Inspection for launchers loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.



4. Swaybraces properly seated.
5. Cartridges installed in all loaded bomb racks, cartridge retainers and auxiliary cartridge caps tight.
6. Suspension hooks are open on unloaded stations.
7. BRU-33:
  - a. Adapter cable installed.
  - b. Rocket cables installed and not connected to launchers.
8. LAU-10/61/68:
  - a. Detent safety pin installed.
  - b. Mode selector switch set as directed.
  - c. (If applicable) Intervalometer switch set to A.
  - d. (LAU-10) Detent lift arm in FIRE position.
  - e. (Mk 84 chaff head) Fuze set as directed.
9. (If applicable) Frangible fairings installed on launchers and arrows indicate locked position aligned.
10. Verify that proper code inputs are inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
11. Tools and handling/loading equipment removed from area.
12. Report status of aircraft to proper authority.

**17-15. PRIOR TO LAUNCH.**

17-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

17-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

**NOTE**

If operational conditions require, rearming area procedures may be performed in the arming area.

**A1-F18AE-LWS-000**  
**Rocket Launchers**

17-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Aircrew must place both hands in full view at all times during stray voltage check.

Complete stray voltage check at all stations requiring check prior to connecting launchers.

Do not stand directly in line of fire of forward firing ordnance.

**NOTE**

The following steps should be performed in arming area; however, these steps may be performed in rearming area when necessitated by operational requirements.

1. Position safety person in view of aircrew. Notify pilot of intention to perform stray voltage check.

**WARNING**

If stray voltage is detected, do not electrically connect launcher. Notify proper authority.

2. Perform stray voltage check (Paragraph 5-34).
3. Indicate to aircrew stray voltage check complete.

17-19. **ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view prior to arming aircraft.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to arm aircraft.
3. Connect rocket cable to launchers.
4. Remove launcher safety pin.
5. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

**17-20. AFTER LANDING OR GROUND ABORT.**

17-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded launchers as a result of a ground abort.

17-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

17-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

Aircrew must place both hands in full view prior to dearming aircraft.

Do not stand directly in line of fire of forward firing ordnance.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to safe aircraft.
3. Verify ground safety handles in LOCKED position.
4. Install launcher safety pins.
5. Electrically disconnect rocket cables from launchers.

**WARNING**

(LAU-61/68) Thermal/RADHAZ barriers are required for shipboard operations but forward barrier is optional when using inert warheads.

6. (If applicable) Install thermal/RADHAZ barriers.
7. Indicate to aircrew that aircraft is safe.

17-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

1. Verify ground safety handles in LOCKED position.
2. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.

**Rocket Launchers**

4. Ensure BRU-33 rocket cables are electrically disconnected from rocket launchers and that safety pins are installed.

**WARNING**

If a fired launcher has unexpended rockets in any tube, notify proper authority.

**NOTE**

A cracked nose fairing may indicate a loose rocket in a tube.

5. Inspect fired launchers for unexpended rockets.
6. Report status of aircraft to proper authority.

17-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 17-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 17-6).
  - b. Perform Weapon Inspection for launchers to be loaded (Paragraph 17-8).
  - c. Load launchers according to Weapon Loading procedures (Paragraph 17-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 17-6).
  - b. Perform Weapon Inspection (Paragraph 17-8).
4. Perform Postloading Inspection (Paragraph 17-13).
5. Perform Prior to Launch procedures (Paragraph 17-15).

**17-26. WEAPON UNLOADING.**

17-27. **BRU-33 RACK PREPARATION.** Prepare BRU-33 for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.

5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. Launcher safety pins installed, rocket cables disconnected.
8. (If applicable) Remove nose and tail fairing from rocket launchers.

**WARNING**

Do not rotate fuzes clockwise.

9. (Mk 84 Chaff head) Set fuzes to SAFE.

**WARNING**

(LAU-61/68) Thermal/RADHAZ barriers are required for shipboard operations. Forward barrier is optional when using inert warheads.

10. (If applicable) Verify that thermal/RADHAZ barriers installed.

**CAUTION**

Verify handling/loading equipment is configured to accept launcher being unloaded.

11. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
12. Position handling/loading equipment under station to be unloaded and secure.
13. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until launcher is supported.
  - b. Secure launcher to handling/loading equipment with tiedown straps.
14. (If applicable) Bomb hoist unloading (Paragraph 5-33).
  - a. Install hoisting band and trolleys on launcher.
  - b. Operate hoist until hoist is supporting weapon.
  - c. Position one person at nose and one person at tail of launcher to steady and guide launcher onto handling/loading equipment.

17-28. **BRU-33 UNLOADING.** Unload BRU-33 as follows:

1. (If applicable) Bomb truck/weapon loader unloading:

**Rocket Launchers**

- a. Rotate ground safety handle to UNLOCKED.
- b. Rotate MANUAL RELEASE to open suspension hooks.
- c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower launcher onto handling equipment.
  - d. Secure launcher to handling equipment with weapon tiedown straps.
3. Remove handling/loading equipment with launcher from under aircraft.
4. Install cartridge retainers and auxiliary cartridge caps.
5. (If applicable) Remove rocket cables.
6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove launchers and handling/loading equipment from area.

**SECTION XVIII**  
**AIM-7 SPARROW MISSILES**

**18-1. INTRODUCTION.**

18-2. This section contains loading and unloading information for the missiles listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AIM-7 Series

**18-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

18-4. ASE authorized for loading AIM-7 missiles is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

18-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. Wing Unlock Pliers
2. Allen Wrench 1/8-inch
3. Wing Lock Tool (PN 1715AS382)
4. LAU-115 Wear Gauge (PN 74T043398-2001)

**18-6. AIRCRAFT PREPARATION/INSPECTION.**

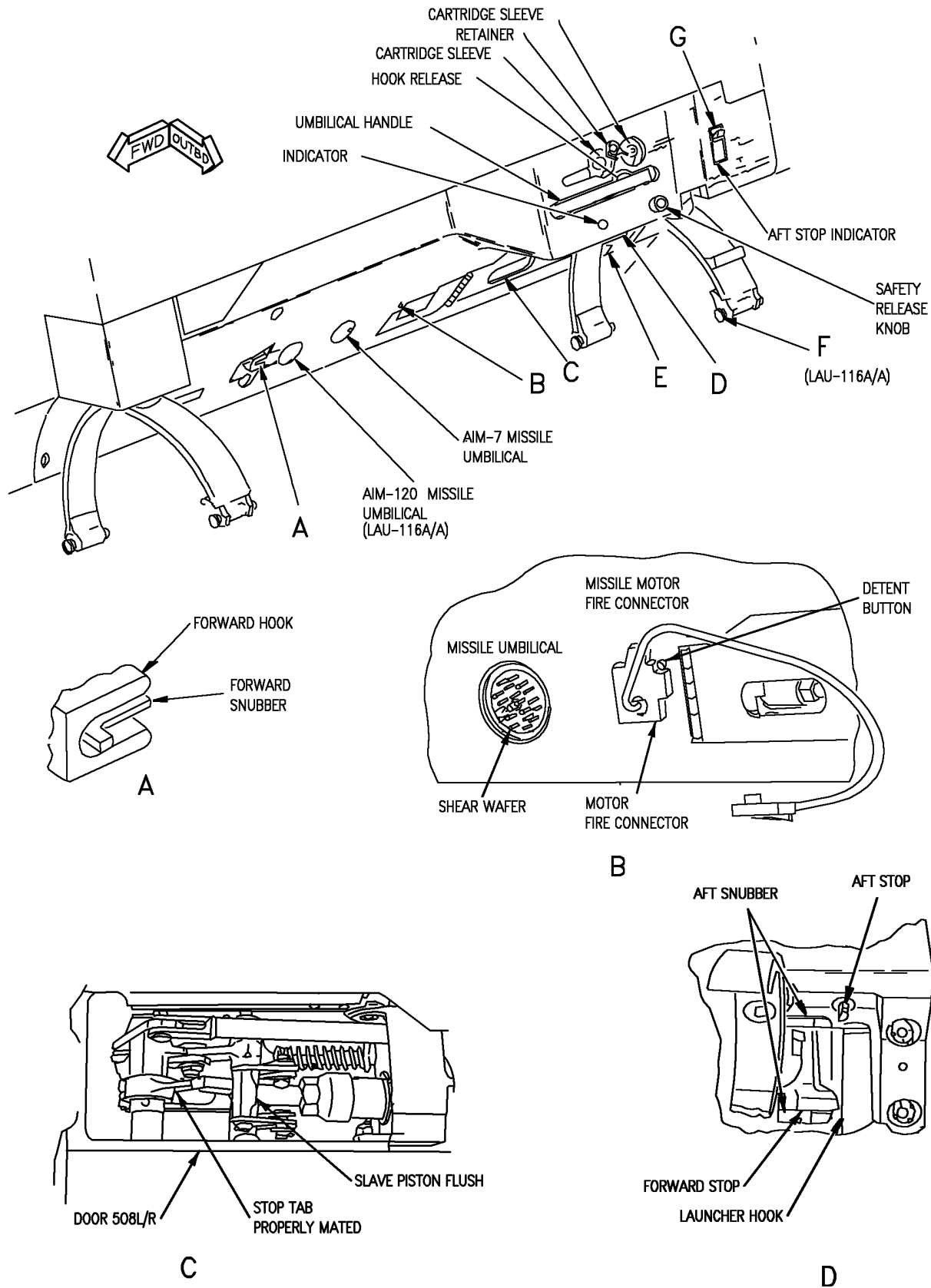
18-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Prepare/inspect launchers for loading as outlined in the following procedures:
  - a. LAU-116 (Figure 18-1):
    - (1) Visually check launcher for damage.
    - (2) Ensure ejector pistons are not damaged and properly lubricated.
    - (3) Open launcher door 508L/R.

**CAUTION**

Substeps (4) and (5) must be performed separately and in sequence to prevent a false locked indication and possible loss of missile or damage to launcher.

**A1-F18AE-LWS-000**  
**AIM-7 Sparrow Missiles**



**Figure 18-1. LAU-116 Launcher Inspection (Sheet 1 of 2)**



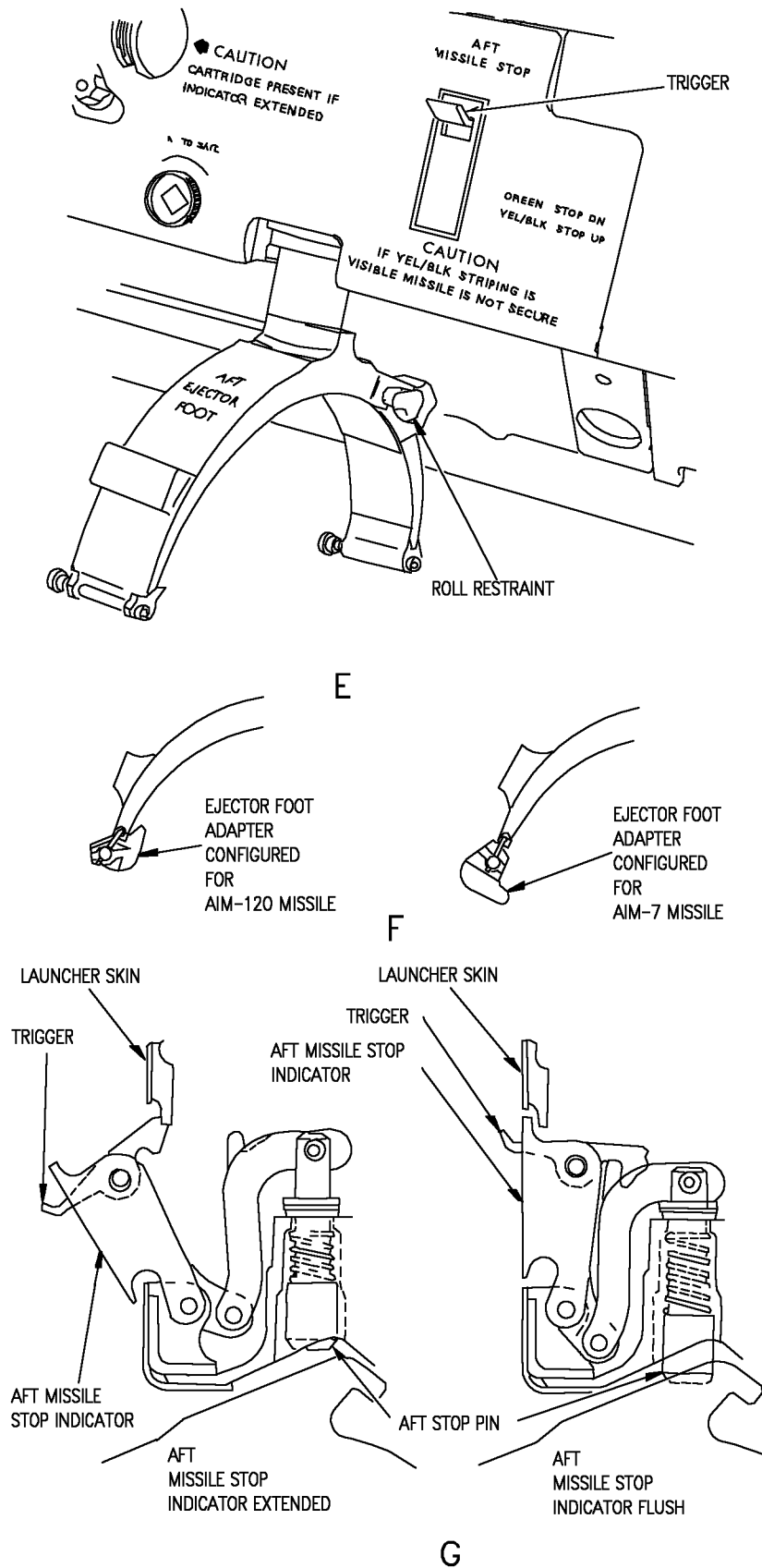


Figure 18-1. LAU-116 Launcher Inspection (Sheet 2)

**A1-F18AE-LWS-000**  
**AIM-7 Sparrow Missiles**

(4) (If applicable) Insert wrench into HOOK RELEASE socket and turn to the LATCH (full stop) position.

**NOTE**

During CV night operations, the indicator will be solid for SAFE and striped for unsafe.

(5) (If applicable) Insert wrench into SAFETY RELEASE and turn clockwise to the SAFE position. Indicator will show GREEN.

(6) Visually inspect that slave piston is flush with rod end and bellcrank stop tab is properly mated to drive bellcrank.

(7) Close launcher door 508L/R.

(8) Check forward and aft snubbers for operation by pushing snubbers forward and releasing. Snubbers will return to original position when released.

(9) Retract missile stop indicator as follows:

(a) Disengage trigger on aft missile stop indicator.

(b) Push aft missile stop pin up into launcher until aft missile stop indicator begins to protrude from launcher skin.

(c) Grasp indicator body and pull outboard and lock trigger. Aft missile stop pin is up and indicator shows YEL/BLK striping.

(10) Inspect shear wafer for serviceability as follows (Figure 18-2):

(a) Free of corrosion, dirt, oil and grease.

(b) Pins not loose, bent or broken.

(11) Remove umbilical plug cover and align hole in shear wafer with umbilical plug index pin and install verified/checked shear wafer.

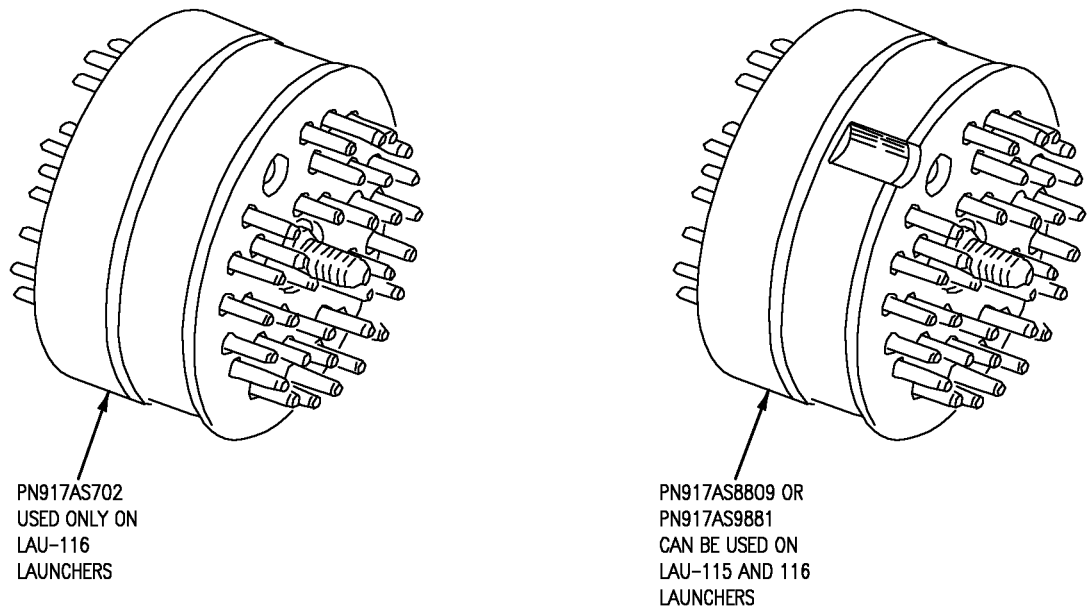
(12) Retract umbilical by opening umbilical handle.

(13) Inspect missile motor fire connector to ensure wire not stripped out of launcher connector base and rubberized coating not torn (Figure 18-3). Install a verified/checked missile motor fire connector as follows:

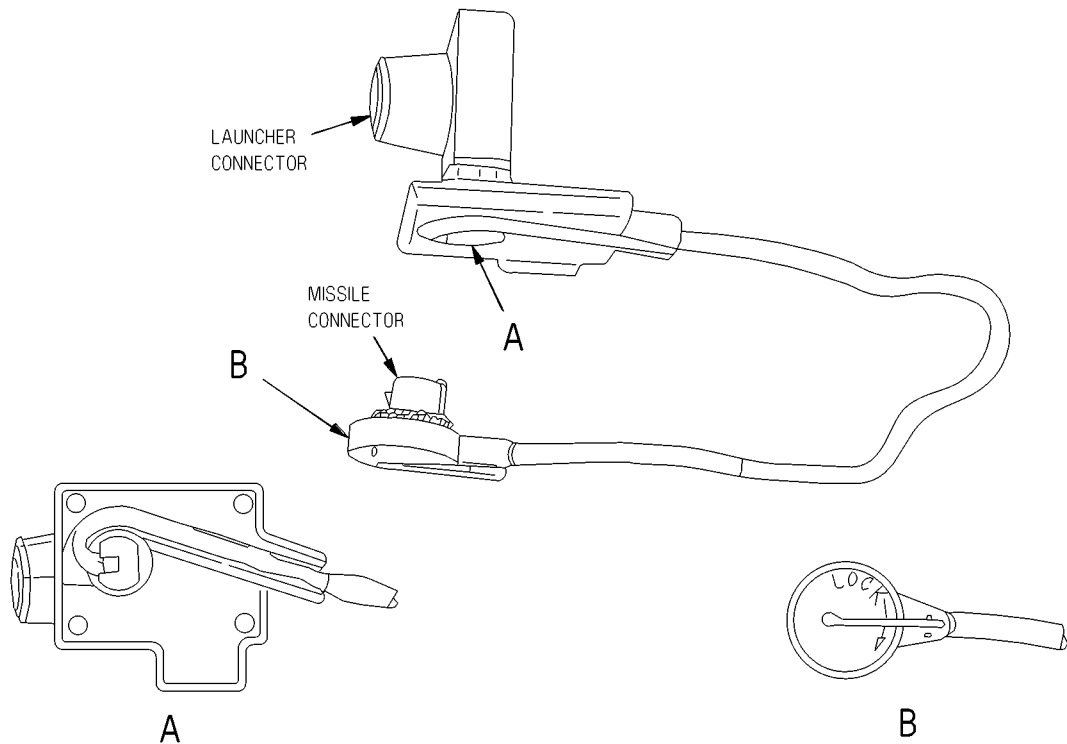
(a) Install missile motor fire (launcher) connector by inserting it into launcher cutout and pushing down.

(b) Ensure it is locked by launcher detent button fully extended.

(c) Unlock motor fire (missile) connector.



**Figure 18-2. Shear Wafer**



**Figure 18-3. Missile Motor Fire Connector**

**A1-F18AE-LWS-000**  
**AIM-7 Sparrow Missiles**

- (14) Ensure roll restraint on aft foot is on inboard and aft side and ejector feet are aligned.
- (15) (LAU-116A/A) Insure protective cover is installed over AIM-120 missile umbilical.
- (16) (LAU-116A/A) Rotate launcher ejector foot adapters to AIM-7 position.

b. LAU-115 (Previously installed) (Figure 18-4):

(1) (LAU-115C/A) Ensure jettison adapter lugs and swaybrace pads are properly configured for AIM-7 missile (Figure 2-16).

(2) Inspect forward and aft restraints in rail slot for cracks, corrosion, and distortion.

(3) Raise and hold latch on AFT RESTRAINT INDICATOR. Actuate AFT RESTRAINT RELEASE to retract aft restraint. Restraint indicator should extend above launcher skin. Release AFT RESTRAINT RELEASE and allow spring force to position aft restraint down in rail slot. Release latch, AFT RESTRAINT INDICATOR flush with launcher skin.

(4) Inspect launcher rail for security of attachment and cleanliness.

(5) Inspect launcher rail for excessive wear as follows:

(a) Using LAU-115 Wear Gauge "CHECK RAIL OPENING" end of gauge, insert end of gauge in between rails at the launcher lug center location.

(b) Gauge shoulder should contact bottom of rail, if gauge can be rotated 180 degrees in either direction while between launcher rails, reject launcher.

(6) Inspect swaybrace snubbers for damage and cleanliness.

(7) Actuate SWAYBRACE RELEASE. SWAYBRACE HOLDBACK DETENT FLAG YEL/BLK, snubbers in full up position.

(8) (If applicable) Remove umbilical plug cover from launcher rail.

(9) Insert wrench into SAFETY LOCKDRIVE and turn to the LOCK position. INDICATOR will show GREEN.

(10) Actuate UMBILICAL DRIVE to MATE position. Verify that umbilical plug index pin faces aft and aligns with umbilical wafer attach screw hole.

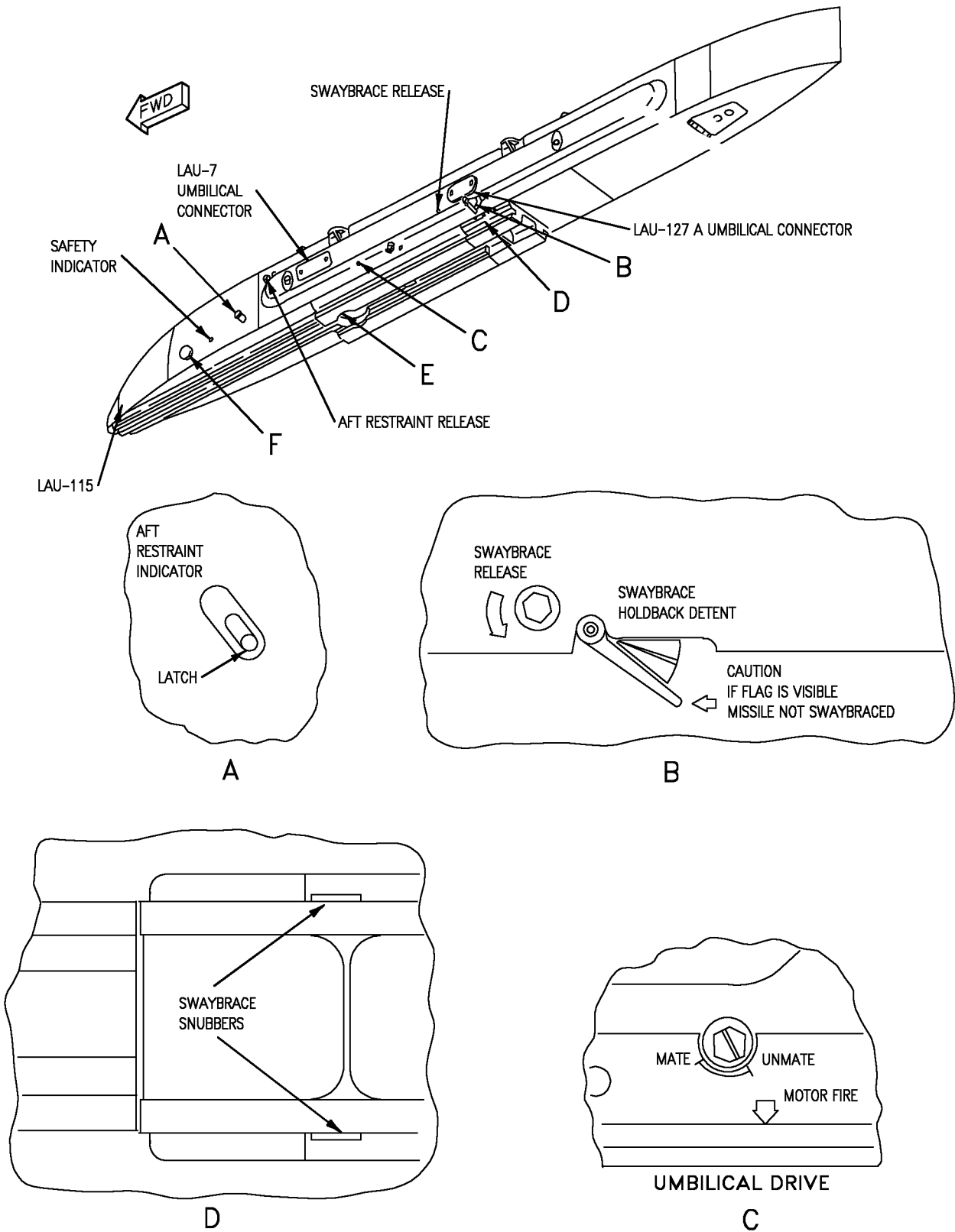
(11) Inspect shear wafer for serviceability as follows (Figure 18-2):

(a) Free of corrosion, dirt, oil and grease.

(b) Pins not loose, bent or broken.

(12) Remove umbilical plug cover and align hole in shear wafer with umbilical plug index pin and install verified/checked shear wafer.

(13) Actuate UMBILICAL DRIVE to UNMATE position.



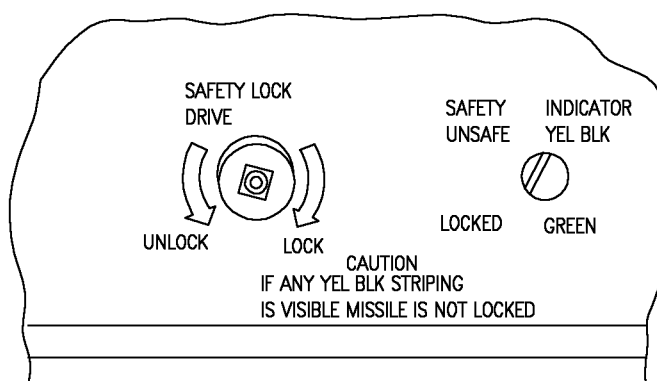
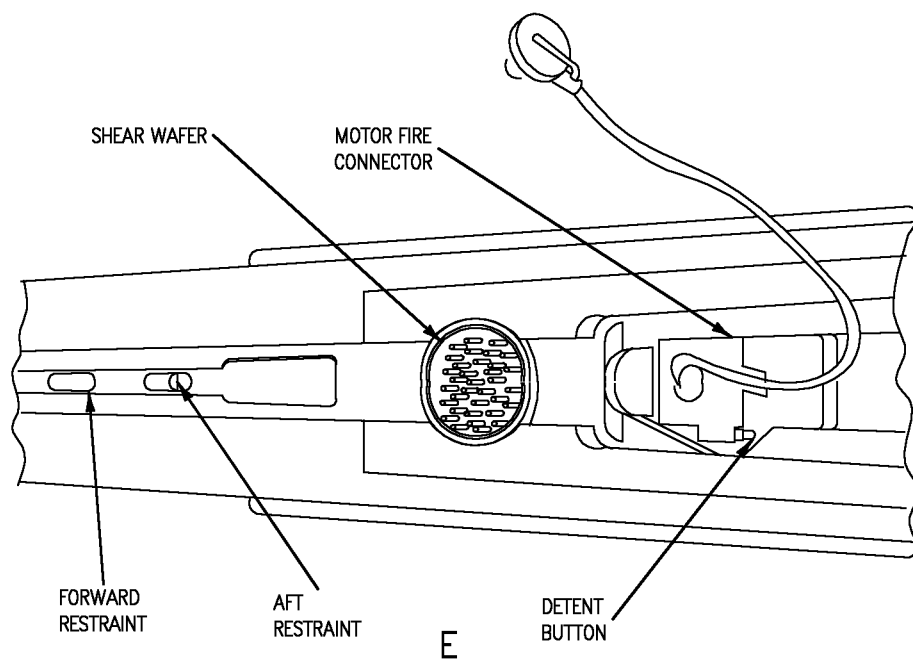


Figure 18-4. LAU-115 Launcher Inspection (Sheet 2)

(14) Inspect missile motor fire connector to ensure wire not stripped out of launcher connector base and rubberized coating not torn (Figure 18-3). Install a verified/checked missile motor fire connector as follows:

(a) Install missile motor fire (launcher) connector by inserting it into launcher cutout and pushing forward.

(b) Ensure it is locked by launcher detent button being fully extended.

(c) Unlock motor fire (missile) connector.

(15) Verify adapter cable is installed (Figure 3-10).

(16) Verify swaybraces properly seated against launcher.

## **18-8. WEAPON INSPECTION.**

18-9. Reject missile and notify proper authority if inspection reveals missile is not acceptable for loading. Inspect missiles for loading as follows (Figure 18-5):

1. Missile SAFE/ARM mechanism T-handle is in SAFE position (GREEN AREA) and folded down.

### **CAUTION**

Extreme care shall be taken when handling, transporting, and loading missile to prevent damage to radome, fuze antenna strips and waveguides.

Damaged radome will affect performance of missile and is cause for rejection.

Missile performance depends upon integrity of the fiberglass fuze antenna strips. Exercise care to prevent damage to fuze antenna strips.

2. Inspect radome, forward and aft waveguides and fuze antenna strips for damage.

### **WARNING**

Reject missile if motor section is damaged. Erratic missile performance or possible motor detonation will result from propellant deformation.

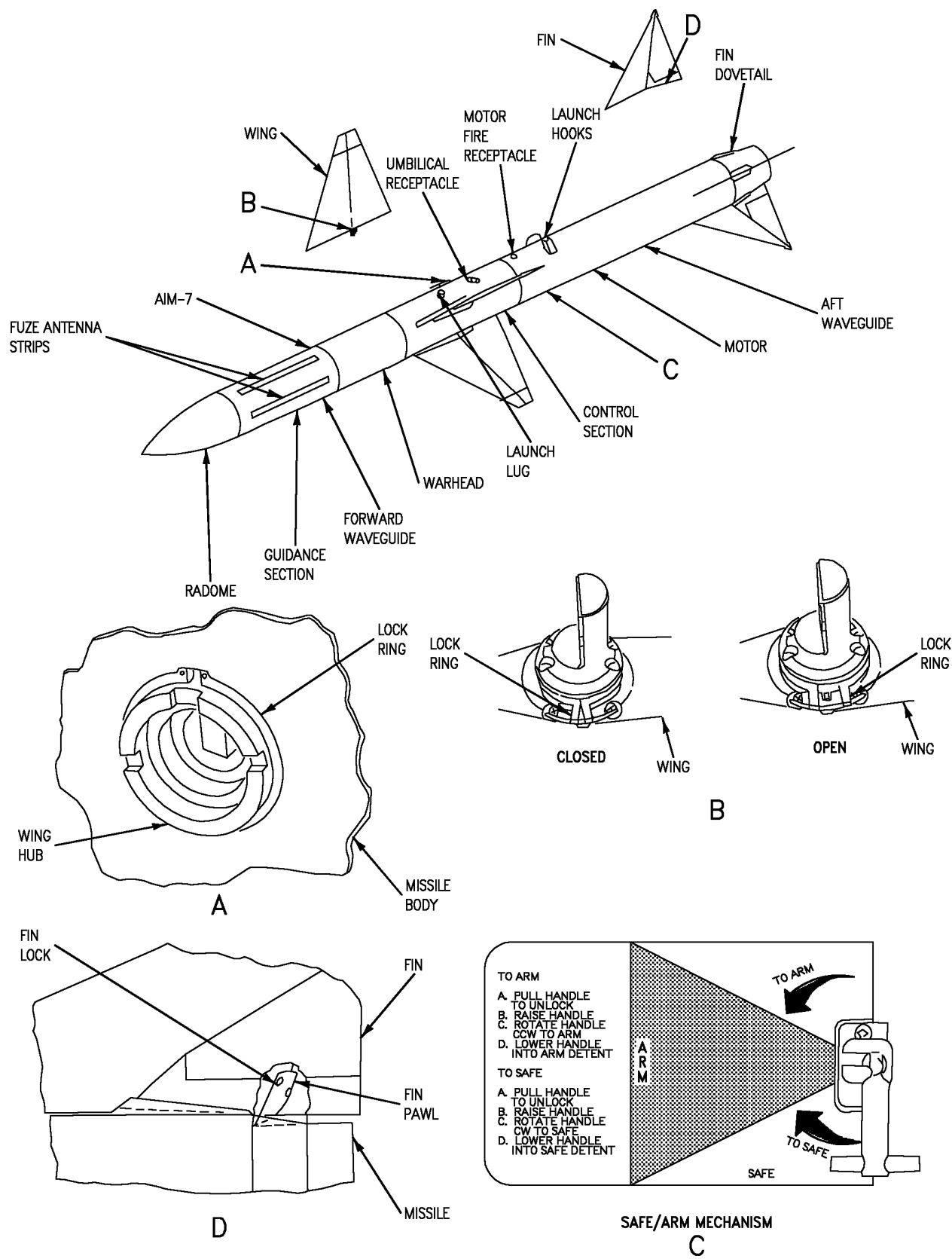
3. Inspect missile sections for dents, cracks, proper mating and security of assembly. Ensure that no movement exists between sections.

4. Inspect launch hooks and launch lug for alignment and security.

### **WARNING**

Do not touch the missile motor fire receptacle after shorting cap is removed.

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**Figure 18-5. AIM-7 Missile Inspection**



5. Remove shorting cap; ensure motor fire receptacle clean and not damaged; reinstall shorting cap.

**CAUTION**

Do not touch the umbilical receptacle after dust cover has been removed.

6. Remove dust cover and inspect umbilical receptacle for cracks and cleanliness.
7. (If applicable) Remove dust cover; inspect aft fin dovetails for proper alignment and security.
8. Verify missile motor weather seal is intact.
9. (If applicable) Remove wing hub dust covers from control section.
10. Inspect each wing hub for alignment; lock ring seated and secured.
11. Inspect wing mounting studs for cleanliness and alignment.
12. Inspect wings and tail fins for dents, cracks, distortion, corrosion and proper operation of components.
13. Ensure wing lock ring is closed on wing mounting stud (Figure 18-5). If lock ring is open, compress it to the closed position. Verify wing lock ring is secured by lock ring keeper.
14. Inspect fin lock mechanism by actuating fin lock with allen wrench. Ensure pawl retracts into fin when fin lock is actuated and extends under spring pressure when released.

**18-10. WEAPON LOADING.**

18-11. **LAUNCHER PREPARATION.** Prepare launchers for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 18-6) and Weapon Inspection (Paragraph 18-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. Verify missile motor fire connector installed in launcher. Wire not stripped out of launcher connector base and rubberized coating not torn.
5. Verify shear wafer installed on launcher umbilical.
6. LAU-116:

**CAUTION**

When operating UMBILICAL HANDLE to retract shear wafer; additional pressure may be required to ensure shear wafer is fully retracted.

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- a. Ensure umbilical fully retracted.
- b. Verify SAFETY RELEASE indicator in GREEN-SAFE position.
- c. Verify AFT MISSILE STOP indicator extended from launcher skin (YEL/BLK striping visible), trigger locked and missile stop pin up.

7. LAU-115:

- a. Verify UMBILICAL DRIVE in UNMATE position.
- b. Verify SAFETY LOCK DRIVE in LOCK position and indicator in GREEN position.

8. (If applicable) Bomb truck/weapon loader loading.

- a. Position handling/loading equipment and weapon under station to be loaded and secure.

9. (If applicable) Bomb hoist loading (fuselage stations):

- a. Install AIM-7 hoisting adapter (74D750030) as follows (Figure 18-6):

(1) Position adapter fitting on beam for fuselage station to be loaded.

(2) Install aft end of hoist adapter on flap rib assembly by inserting the aft quick release pin into the forward hole of flap rib assembly.

(3) Install forward end of hoist adapter by inserting forward quick release pin in quick release pin receptacle on engine intake.

- b. Position handling/loading equipment and weapon under station to be loaded and secure.

- c. Retract cradle pins on VER support cradle (Figure 18-7).

d. Insert AIM-7 missile cradle (74D750003) into VER support cradle and reinstall cradle pins (Figure 18-7).

**NOTE**

AIM-7 missile cradle must be positioned approximately 4 1/4-inches forward of missile aft hanger.

e. Remove ball lock pins from AIM-7 cradle, place cradle on missile and reinstall ball lock pins (Figure 18-7).

f. Install bomb hoist on AIM-7 missile loading adapter and attach hoist cable to AIM-7 missile cradle (Figure 18-7).

- g. Operate hoist to remove slack from cable.

h. Position one person at nose, one person at tail and one person at inboard missile wing position to guide missile while hoisting.

10. (If applicable) Manual loading:

- a. Position handling equipment and weapon under station to be loaded and secure.

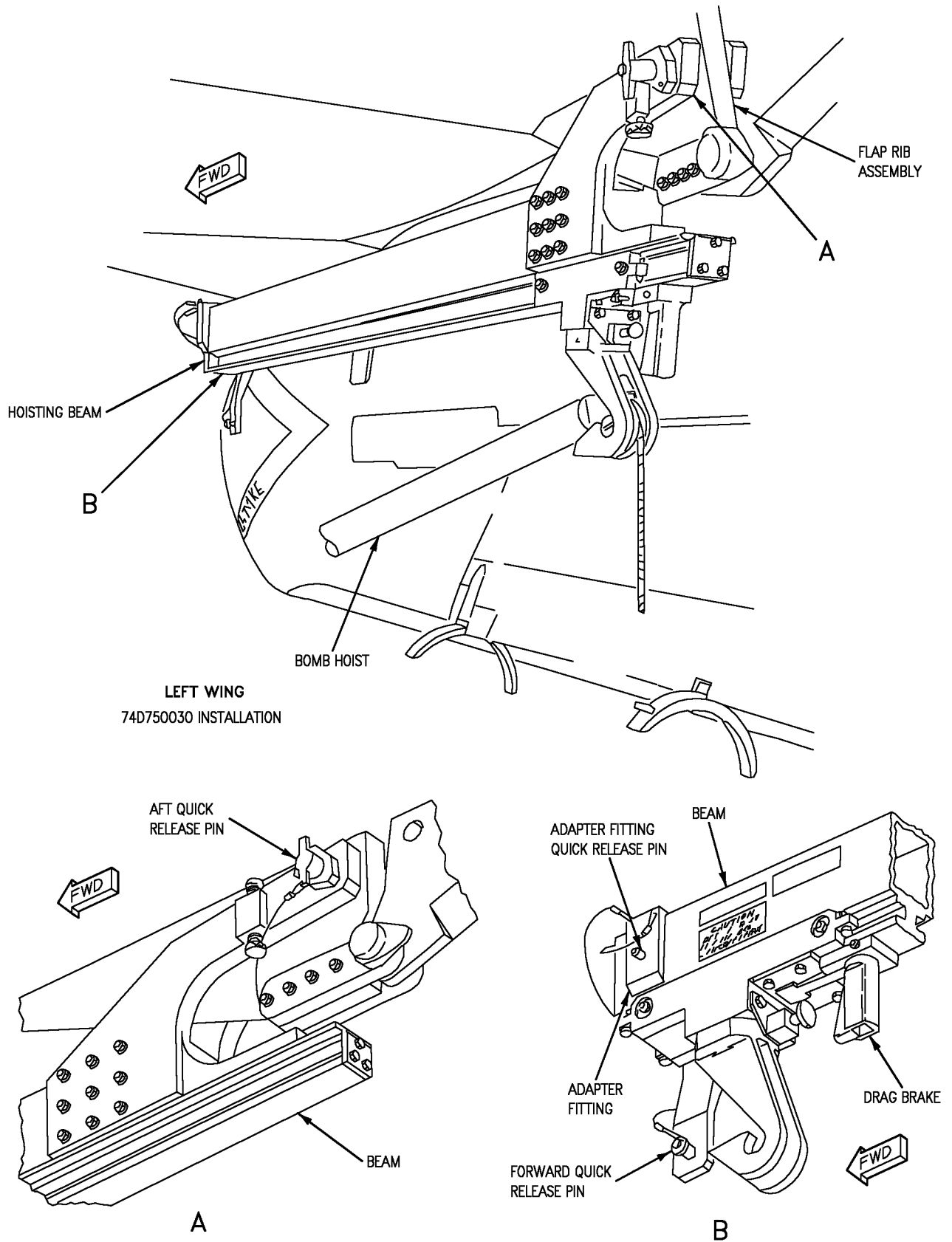
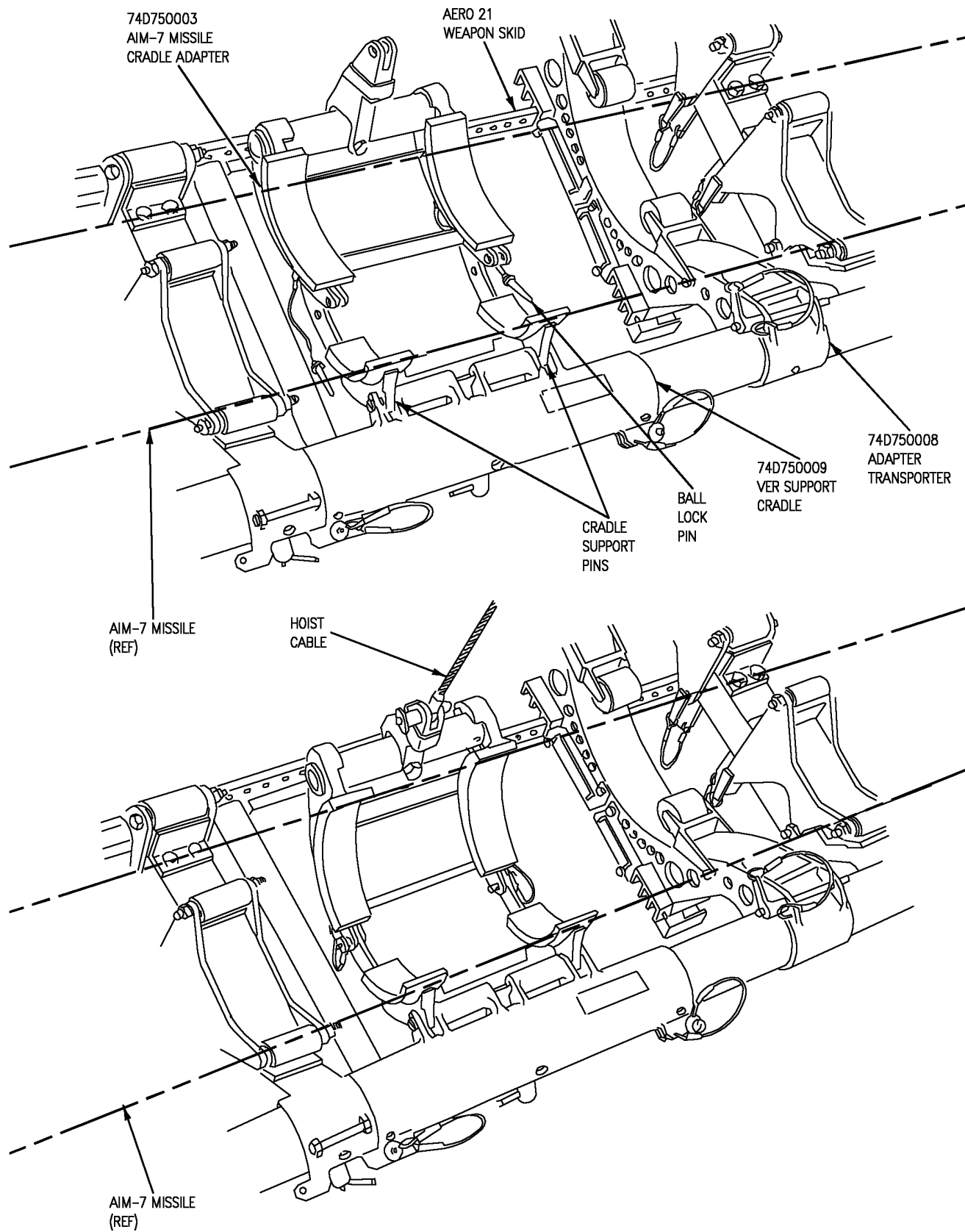


Figure 18-6. AIM-7 Hoisting Adapter Installation

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**Figure 18-7. AIM-7 Cradle Installation in VER Support Adapter**

- b. (If applicable) Install hoisting bar under missile and secure with straps (Figure 18-8).
- 11. Remove weapon tiedown straps securing missile to handling/loading equipment.
- 12. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

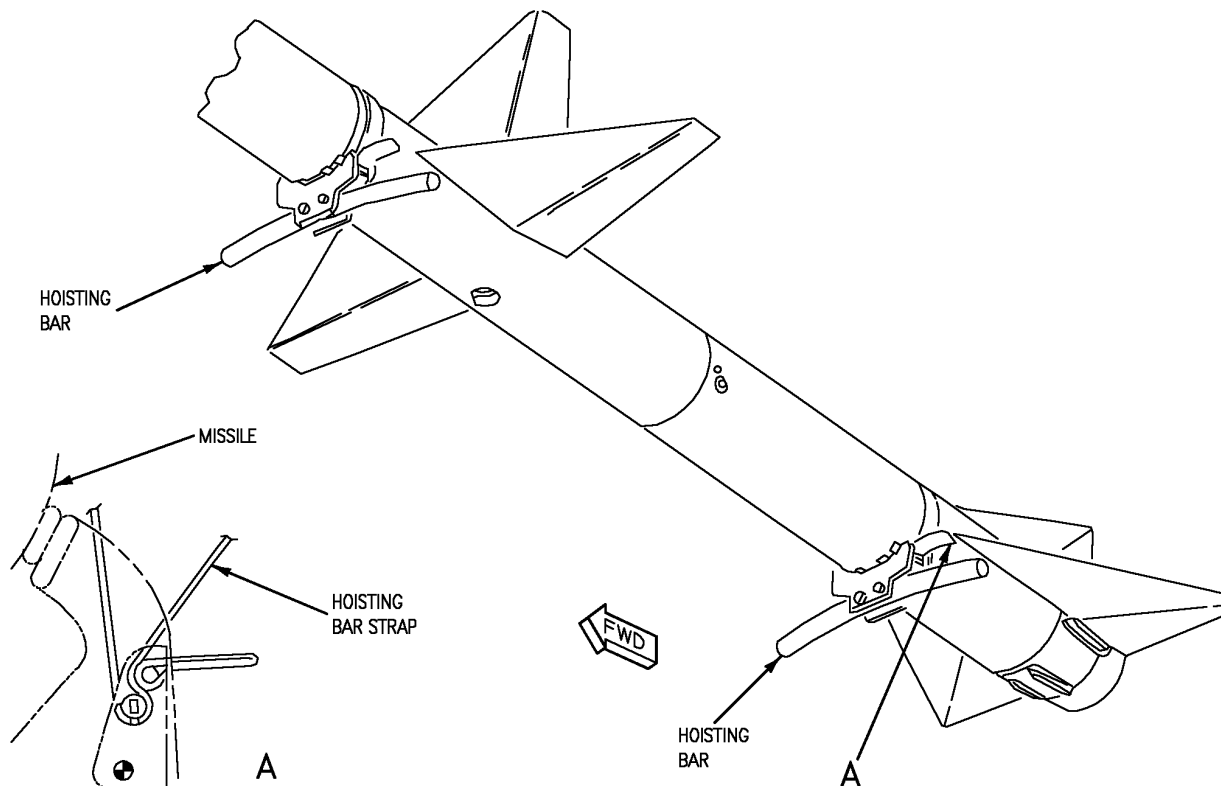
18-12. **LAUNCHER LOADING.** Load missiles as follows:

- 1. LAU-116:

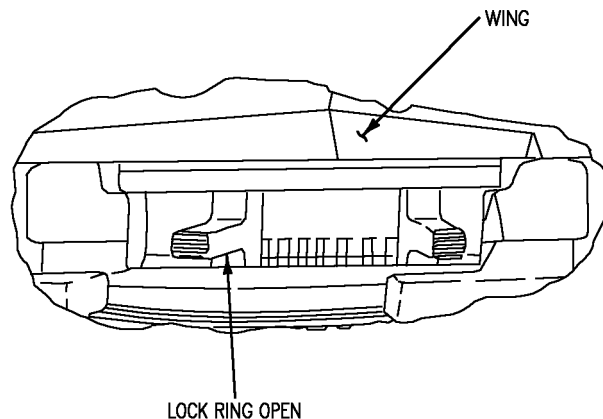
**NOTE**

When using bomb hoist or manually loading fuselage stations, missile must be supported on main landing gear to allow wing and fin installation.

- a. Raise missile and (if applicable) support on main landing gear to allow wing and fin installation.
- b. Install upper and inboard wings as follows (Figure 18-9):
  - (1) Ensure wing lock ring is closed (Figure 18-5).
  - (2) Install wings by aligning hub and wing surface.
  - (3) Push wing into hub.



**Figure 18-8. Aero 64A Hoisting Bar Installation**



**Figure 18-9. Missile Wing Installation**

- (4) Visually inspect that wing locking ring tangs are aligned with index marks on wing.
  - (5) Verify wings are locked by inserting wing lock tool between tangs of lock ring (Figure 18-10). Tangs must contact base of tool or wing is not fully locked.
- c. Install upper and inboard tail fins on the missile as follows (Figure 18-11):
- (1) Install fin in dovetail.
  - (2) Push fin aft until fin locks in place.
  - (3) Verify fin locked by pushing forward.

**CAUTION**

When loading fuselage stations, the missile must be moved manually forward to clear the main landing gear door.

When raising missile, guide upper wing and fin to clear fuselage structure. Do not use wings, fins, or the radome unit for lifting missile.

**NOTE**

Care should be taken to avoid stripping missile motor fire wire from encapsulation. Stripping will result when 1 to 2 pounds of tension are applied to wire.

Prior to raising missile into position rotate missile so that umbilical is at 45 degrees inboard and top fin is at the 12 o'clock position.

While hoisting missile, position missile inboard wing forward of launcher umbilical handle.

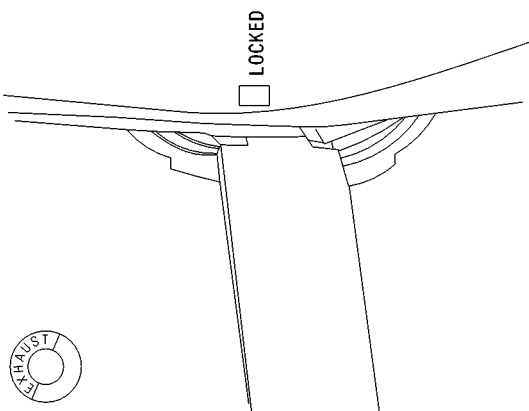


Figure 18-10. Wing Lock Indication

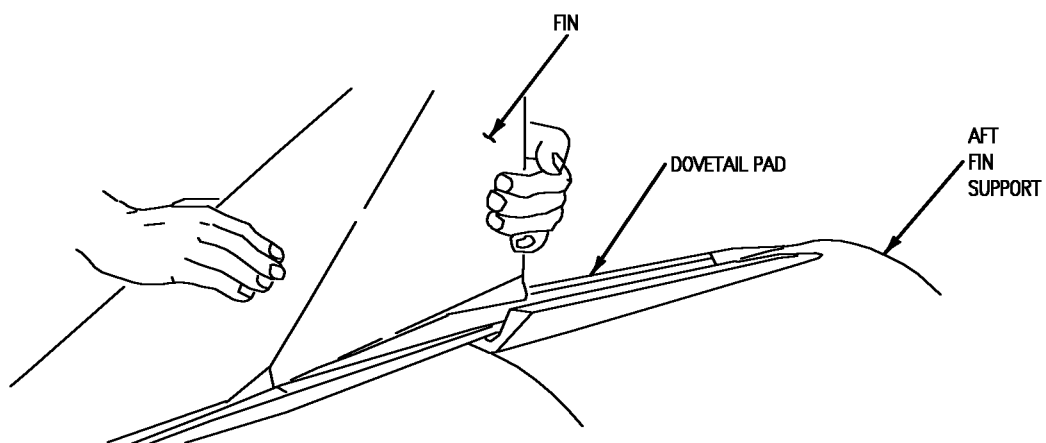


Figure 18-11. Tail Fin Installation

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- d. Raise missile to within 3 inches of launcher and connect and LOCK missile motor fire connector to missile.
- e. Raise missile to launcher until missile wing is in position to slide aft into notch of main landing gear door.
- f. Position missile so that missile lug and hooks align with launcher cavities.
- g. Raise missile until launch lug and hooks bottom out in launcher cavities and position to slide onto launcher hooks.

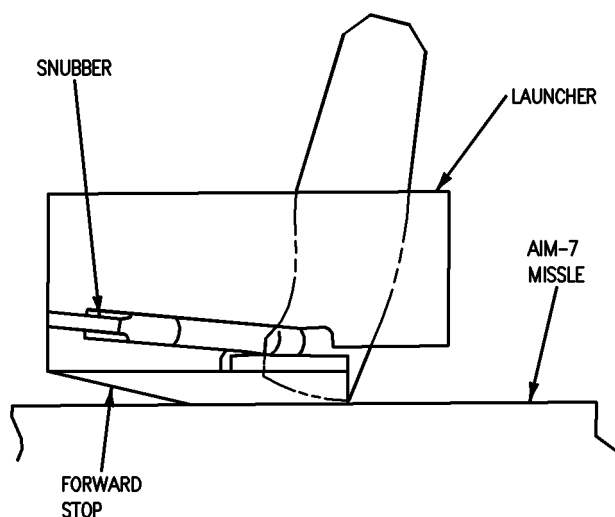
**CAUTION**

AFT MISSILE STOP indicator must be flush with launcher skin and trigger locked or missile loss will occur.

- h. Slide missile forward onto prelocked launcher hooks until the inboard missile hook bears against forward launcher stop and AFT MISSILE STOP indicator returns flush with launcher skin (Figure 18-12).

**NOTE**

To verify the trigger is locked, grasp trigger and pull outboard. AFT MISSILE STOP indicator should remain flush with launcher skin.



**Figure 18-12. Forward Launcher Stop**



- i. Verify AFT MISSILE STOP indicator is flush with launcher skin and trigger locked.

**NOTE**

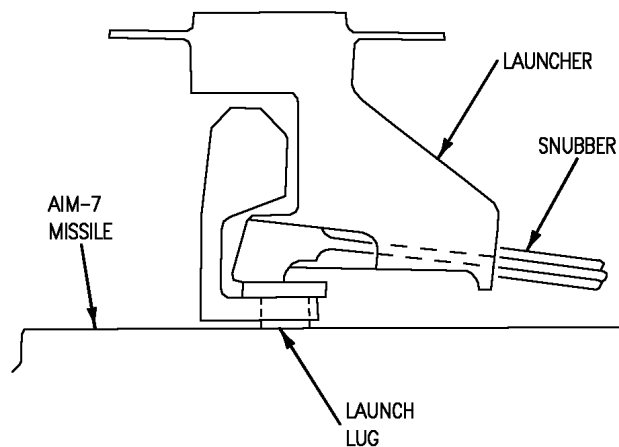
If missile launch lug is not engaged, missile must be removed.

- j. Ensure missile launch lug is engaged and forward and aft snubbers are pressing against missile launch lug and hooks (Figure 18-13).
- k. Ensure SAFETY INDICATOR shows GREEN.
- l. Ease handling/loading equipment until weight of missile is supported by launcher. Gently shake missile to seat snubbers and ensure missile is supported by suspension hooks.
- m. Ensure there is no roll or pitch motion.
- n. Remove AIM-7 missile cradle and hoisting equipment.

**CAUTION**

Umbilical must be aligned with missile umbilical receptacle to prevent damage to pins.

- o. Engage umbilical into missile by closing UMBILICAL HANDLE.



**Figure 18-13. Missile Launcher Lug Engaged**

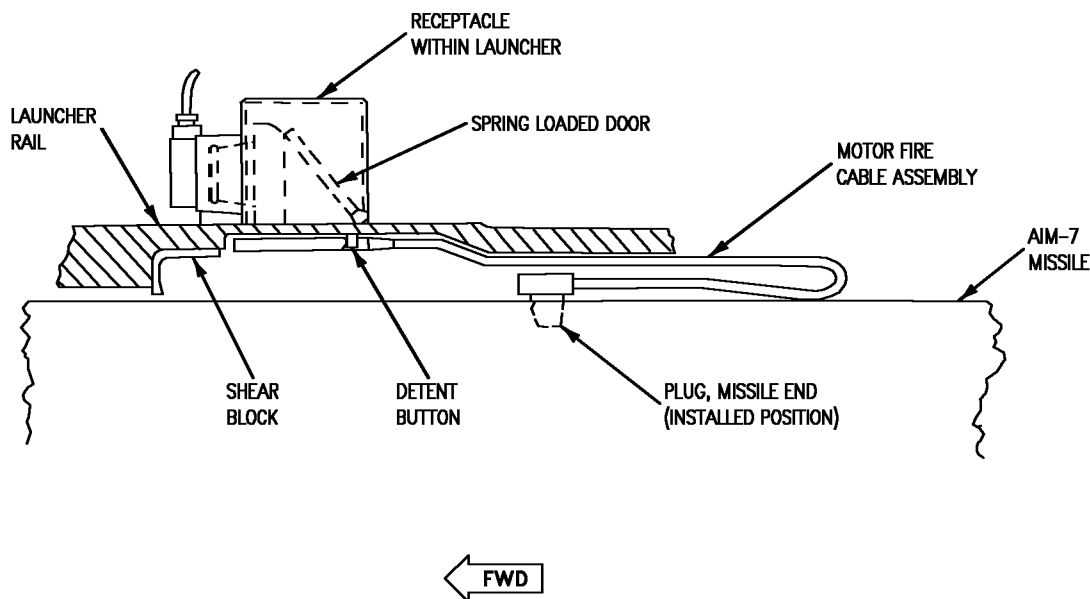
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- p. To install lower and outboard wings and fins on missile, repeat Steps b and c.
2. LAU-115 (Previously installed):

**NOTE**

Top starboard wing must be installed prior to loading missile.

- a. Install top starboard wing on missile as follows (Figure 18-9):
- (1) Ensure wing lock ring is closed (Figure 18-5).
  - (2) Install wing by aligning hub and wing surface.
  - (3) Push wing into hub.
  - (4) Visually inspect that wing locking ring tangs are aligned with index marks on wing.
  - (5) Verify wing is locked by inserting wing lock tool between tangs of lock ring (Figure 18-10). Tangs must contact base of tool, or wing is not fully locked.
- b. Raise missile to within 3 inches of launcher and connect and LOCK missile motor fire connector to missile (Figure 18-14).



**Figure 18-14. LAU-115 Missile Motor Fire Connector**

c. Continue raising missile until missile launch lug is aligned with cutout of launcher rail and launch hooks align with aft rail.

**NOTE**

Ensure launcher umbilical connector remains fully retracted during loading.

- d. Raise and hold latch on AFT RESTRAINT INDICATOR.
  - e. Slide missile forward until missile launch lug is secured between forward and aft restraints.
  - f. Ensure the AFT RESTRAINT INDICATOR is flush with the launcher skin.
  - g. Release latch on AFT RESTRAINT INDICATOR.
  - h. Ensure security of missile on rail. Maximum allowable aft movement is 1/8 inch.
  - i. Rotate UMBILICAL DRIVE to MATE position.
  - j. Push SWAYBRACE HOLDBACK DETENT FLAG up to position snubbers against missile.
  - k. Ensure SWAYBRACE HOLDBACK DETENT FLAG does not show YEL/BLK indication.
  - l. Ensure SAFETY LOCK DRIVE INDICATOR shows GREEN.
  - m. Install remaining wings as follows (Figure 18-9):
    - (1) Ensure wing lock ring is closed (Figure 18-5).
    - (2) Install wings by aligning hub and wing surface.
    - (3) Push wing into hub.
    - (4) Visually inspect that wing locking ring tangs are aligned with index marks on wing.
    - (5) Verify wings are locked by inserting wing lock tool between tangs of lock ring. Tangs must contact base of tool or wing is not fully locked.
  - n. Install tail fins as follows (Figure 18-11):
    - (1) Install fin in dovetail.
    - (2) Push fin aft until fin locks in place.
    - (3) Verify fin locked by pushing forward.
3. Perform tune check on missile as follows:
- a. Position all armament switches in accordance with Table 5-1.

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- b. Connect electrical power to aircraft.
- c. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- d. On the GND PWR control panel, position EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds.
- e. Position left and right DDI power switches to DAY (allow warm-up time).
- f. On the left DDI, press and release MENU pushbutton until BIT pushbutton option is displayed.
- g. On the left DDI, press BIT pushbutton.
- h. On the right DDI, press and release MENU pushbutton until STORES pushbutton option is displayed.
- i. On the right DDI, press STORES pushbutton.
- j. Right DDI displays 7F/7M with X through it for each AIM-7 loaded.

**NOTE**

SMS BIT must be complete prior to positioning radar switch to OPR.

WITH DIGITAL DATA COMPUTER CONFIG/IDENT 10A AND 12A, SMS GO indicates BIT complete.

WITH DIGITAL DATA COMPUTER CONFIG/IDENT 91C, 13C, 15C AND 17C, PBIT GO indicates BIT complete.

- k. On sensor control panel, position RADAR switch to OPR and allow three minutes to warm up.
- l. X is removed from 7F/7M on DDI after radar warm-up.
- m. Position left and right DDI power switches to OFF.
- n. Position RADAR switch to OFF.
- o. Position EXT PWR switch to OFF.
- p. Remove electrical power from aircraft.
- q. (If applicable) Remove cooling air from aircraft.

4. Install cartridges in all loaded stations and tighten cartridge retainers and (if applicable) auxiliary cartridge caps (Paragraph 5-25).
5. Place WEAPON LOADED sign in cockpit.
6. Remove tools and handling/loading equipment from area.

#### **18-13. POSTLOADING INSPECTION.**

18-14. Perform Postloading Inspection for missiles loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Cartridges installed in all loaded stations, cartridge retainers and (if applicable) auxiliary cartridge caps tight.
5. Suspension hooks open on unloaded stations.
6. LAU-116:
  - a. SAFETY INDICATOR shows GREENSAFE.

#### **NOTE**

To verify the trigger is detented, grasp trigger and pull outboard, AFT MISSILE STOP indicator should remain flush with launcher skin.

- b. AFT MISSILE STOP indicator flush with launcher skin, trigger detented and aft stop pin in the full down position.
  - c. Missile launch lug is engaged and forward and aft snubbers are pressing against missile launch lug and missile hooks.
  - d. Ensure there is no roll or pitch motion.
7. LAU-115:
  - a. Ensure SAFETY DRIVE LOCK shows green.
  - b. Launcher electrically connected.
  - c. Swaybraces properly seated.
  - d. AFT RESTRAINT INDICATOR is latched and flush with launcher skin.

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- e. Snubbers engaged against missile launch hooks.
- 8. Shear wafer is properly mated to missile (no visible pin surface showing).
- 9. Missile SAFE/ARM mechanism T-handle is in SAFE position (GREEN AREA) and folded down.
- 10. Wings and fins secure.
- 11. Radome, fuze antenna strips and waveguide secure; not damaged.
- 12. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
- 13. Tools and handling/loading equipment removed from area.
- 14. Report status of aircraft to proper authority.

**18-15. PRIOR TO LAUNCH.**

18-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows:

18-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

**NOTE**

If operational conditions require, rearming area procedures may be performed in the arming area.

- 1. (If applicable) Remove/stow WEAPON LOADED sign.
- 2. (If applicable) Secure access doors and panels.

18-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for AIM-7 missiles in the rearming area after engine turnup.

18-19. **ARMING AREA.** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during arming.

- 1. Position safety person in view of aircrew.
- 2. Notify aircrew of intention to arm aircraft.

3. Position missile SAFE/ARM mechanism to ARM as follows:

**CAUTION**

If excessive pressure is required to place T-handle to arm position or if T-handle will not rotate to ARM, return to SAFE position and notify proper authority.

- a. Raise T-handle to unlock and rotate 90 degrees counterclockwise to ARM position.
  - b. Fold T-handle to lock in ARM position (RED AREA).
4. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

**18-20. AFTER LANDING OR GROUND ABORT.**

18-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

18-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

- 18-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to safe aircraft.
3. Position missile SAFE/ARM mechanism to SAFE as follows:

**WARNING**

If T-handle cannot be moved from ARM position, immediately notify proper authority and remain clear of missile.

- a. Raise T-handle to unlock and rotate 90 degrees clockwise to SAFE position (GREEN AREA).
  - b. Fold T-handle to lock in SAFE position (GREEN AREA).
4. Indicate to aircrew that aircraft is safe.

18-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. Verify launcher INDICATORS are in the GREEN-SAFE position.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. Position all armament switches in accordance with Table 5-1.
5. (If applicable) Remove motor fire connectors from fired launchers.
6. Report status of aircraft to proper authority.

18-25. **TURNAROUND.** Turnaround procedures apply to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 18-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 18-6).
  - b. Perform Weapon Inspection for missiles to be loaded (Paragraph 18-8).
  - c. Load missile according to Weapon Loading procedures (Paragraph 18-10).
3. For aircraft recovered with loaded stations perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 18-6).
  - b. Perform Weapon Inspection (Paragraph 18-8).
4. Perform Postloading inspection (Paragraph 18-13).
5. Perform Prior to Launch procedures (Paragraph 18-15).



## **18-26. WEAPON UNLOADING.**

18-27. **LAUNCHER PREPARATION.** Prepare launchers for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Ensure that missile SAFE/ARM mechanism T-handle is in SAFE position (GREEN AREA) and folded down.
7. LAU-116:
  - a. Ensure SAFETY INDICATOR shows GREEN-SAFE.
  - b. Remove cartridge retainers and remove cartridges.

<b>CAUTION</b>
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When operating UMBILICAL HANDLE to retract shear wafer; additional pressure may be required to ensure shear wafer is fully retracted.

- c. Retract umbilical by opening UMBILICAL HANDLE. Ensure shear wafer is clear of missile.
- d. Remove lower and outboard wings as follows:
  - (1) Using wing unlock pliers close lock ring on wing mounting studs.
  - (2) Pull wing from the wing hub.
- e. Remove lower and outboard fins as follows:
  - (1) Using an allen wrench, rotate fin lock.
  - (2) Push fin forward until clear of the dovetail pad.
- f. (Bomb hoist unloading) Install AIM-7 hoisting adapter (74D750030) as follows (Figure 18-6):
  - (1) Position adapter fitting on beam for fuselage station to be unloaded.
  - (2) Install aft end of hoist adapter on flap rib assembly by inserting the aft quick release pin into the forward hole of flap rib assembly.

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(3) Install forward end of hoist adapter by inserting forward quick release pin in quick release pin receptacle on engine intake.

8. LAU-115:

- a. Ensure SAFETY LOCK DRIVE indicator shows GREEN-SAFE.
- b. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
- c. Actuate UMBILICAL DRIVE to UNMATE position. Ensure shear wafer is clear of missile.
- d. Remove wings as follows:
  - (1) Using wing unlock pliers, close lock ring on wing mounting studs.
  - (2) Pull wing from the wing hub.
- e. Remove fins as follows:
  - (1) Using an allen wrench, rotate fin lock.
  - (2) Push fin forward until clear of the dovetail pad.

<b>CAUTION</b>
----------------

Verify handling/loading equipment is configured to accept missile being unloaded.

- 9. Position handling/loading equipment.
- 10. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until missile is supported.
  - b. (As applicable) Secure missile to handling/loading equipment with weapon tiedown straps.
- 11. (If applicable) Bomb hoist unloading (fuselage stations):

**NOTE**

AIM-7 missile cradle must be positioned approximately 4-1/4 inches forward of missile aft launch hooks.

- a. Install AIM-7 missile cradle on missile.
- b. Install bomb hoist on AIM-7 missile loading adapter and attach hoist cable to AIM-7 missile cradle.
- c. Operate hoist to remove slack from cable until cable is supporting missile.

d. Position one person at nose, one at tail and one person at inboard missile wing to guide missile onto handling/loading equipment.

12. (If applicable) Manual unloading:

a. (If applicable) Install hoisting bar under missile and secure with straps (Figure 18-8).

18-28. **LAUNCHER UNLOADING.** Unload missiles from launchers as follows:

1. LAU-116:

a. While supporting missile unlock SAFETY RELEASE by turning SAFETY counterclockwise until knob stops (YEL/BLK indication).

b. Insert wrench into HOOK RELEASE socket and turn to the UNLATCH position.



The missile must be moved forward to clear the main landing gear door.

c. Move missile forward until clear of main landing gear door.



Missile motor fire connector must be disconnected before fully lowering missile.

d. Lower missile 2 to 3 inches, unlock and disconnect missile motor fire connector from missile.

#### **NOTE**

When using bomb hoist or manually unloading fuselage stations, missile must be supported on main landing gear to allow wing and fin removal.

e. Lower missile and if applicable, support on main landing gear.

f. Install missile motor fire receptacle shorting plug and umbilical dust cover.

g. Remove remaining wings.

h. Remove remaining fins.

i. Continue lowering missile onto handling equipment and secure with weapon tiedown straps.

j. (If applicable) Install wing hub dust covers on missile and missile motor exit nozzle protective cap.

k. (If applicable) Install dust covers on aft fin dovetails.

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- l. Lower umbilical by closing UMBILICAL HANDLE.
  - m. Remove shear wafer and install launcher umbilical dust cover.
  - n. Remove missile motor fire connector from launcher.
  - o. Insert wrench into hook release socket and turn to the latch position.
  - p. Insert wrench into safety release knob and turn clockwise to the SAFE position. Indicator will show GREEN.
  - q. Install cartridge retainers.
  - r. Secure access doors and panels.
  - s. (If applicable) Remove/stow WEAPON LOADED sign.
  - t. Remove missiles and handling/loading equipment from area.
2. LAU-115:
- a. Actuate SWAYBRACE RELEASE. SWAYBRACE HOLDBACK DETENT FLAG YEL/BLK, snubbers in full up position.
  - b. Raise latch on AFT RESTRAINT INDICATOR and pull out to release indicator.
  - c. While supporting missile, actuate AFT RESTRAINT bellcrank and hold.

**NOTE**

Ensure launcher umbilical connector remains fully retracted during unloading.

- d. Slide missile aft to clear aft restraint.
- e. Continue to slide missile aft and lower missile until missile motor fire connector can be disconnected from missile.
- f. Unlock and disconnect missile motor fire connector from missile.
- g. Lower missile onto handling/loading equipment and secure with weapon tiedown straps.
- h. Install missile motor fire receptacle shorting plug and umbilical dust cover.
- i. (If applicable) Install wing hub dust covers on missile and missile motor exit nozzle protective cap.
- j. (If applicable) Install dust covers on aft fin dovetails.
- k. Actuate UMBILICAL DRIVE to MATE position.

- l. Remove shear wafer and install launcher umbilical dust cover.
- m. Remove missile motor fire connector from launcher.
- n. Install cartridge retainers and auxiliary cartridge cap.
- o. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
- p. Secure access doors and panels.
- q. (If applicable) Remove/stow WEAPON LOADED sign.
- r. Remove missiles and handling/loading equipment from area.



## AIM-9 Sidewinder Missiles and Instrumentation Packages

## SECTION XIX

## AIM-9 SIDEWINDER MISSILES AND INSTRUMENTATION PACKAGES

**19-1. INTRODUCTION.**

19-2. This section contains loading and unloading information for the missiles listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading and the missiles/pods are checked out and fully assembled. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AIM-9L/M

AIM-9X

INSTRUMENTATION PACKAGE:

AAU Pod

MSR Pod

AIP-FW Pod

NACTS Pod

AIS Pod

SAIP Pod

EATS Pod

TACTS Pod

LATR Pod

**19-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

19-4. ASE authorized for loading AIM-9 series missiles and instrumentation packages are listed in Table 5-7. Refer to this table to match equipment with weapon to be loaded:

19-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

1. LAU-7 Slotted Detent Wrench Safety Pin.
2. (AIM-9L/M) TTU-304/E Guided Missile Tester.
3. Headphones with Adapter Cable.
4. (AIM-9L/M) Bottle Wrench.
5. (AIM-9L/M) Coolant Tank Removal Tool.
6. (AIM-9L/M) Torque Wrench, inch-lb.
7. (AIM-9L/M) Probe Sealing Cap Wrench.

**19-6. AIRCRAFT PREPARATION/INSPECTION.**

19-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, if applicable Paragraph 5-11, and as follows:

1. (As applicable) Verify BRU-32 swaybraces are properly seated against LAU-115 series launchers.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

2. (As applicable) Verify LAU-115C/A jettison adapter swaybrace pads and lugs are properly configured for the LAU-127A/A with AIM-9 missiles (Figure 2-16).
3. (As applicable) Verify adapter cable installed (Figure 3-10).
4. (As applicable) LAU-115 access doors and panels secure.

**NOTE**

AIM-9X will only be loaded on LAU-7D/A launchers.

5. Prepare/inspect LAU-7 launchers for loading as follows (Figure 19-1):
  - a. Press forward fairing release button and slide fairing forward.
  - b. Remove dust cover and verify that launcher electrical receptacle and umbilical block hook assembly are serviceable.
  - c. Remove detent holddown pin.
  - d. Open launcher aft fairing.
  - e. Operate aft fairing latch and verify rear snubbers close and open without binding.

**NOTE**

Nitrogen receiver will be installed at all times to prevent contamination of the launcher coolant system.

(AIM-9X) Nitrogen receiver does not need to be filled with nitrogen. AIM-9X does not require an external nitrogen source.

- f. (If applicable) Inspect nitrogen receiver assembly pressure gage to ensure adequate supply of nitrogen (Figure 19-1).
- g. (HIPPAG) Ensure events counter has sufficient number of events remaining prior to servicing (Figure 19-1).
- h. Close aft fairing, but do not secure.
- i. Ensure launcher striker points are clean and not damaged.
- j. Install and rotate detent wrench safety pin; verify aft detent lug retracts and forward snubbers move forward and up into launcher.
- k. Release pressure on detent wrench safety pin and verify that aft detent lug lowers and snubbers return down.



## AIM-9 Sidewinder Missiles and Instrumentation Packages

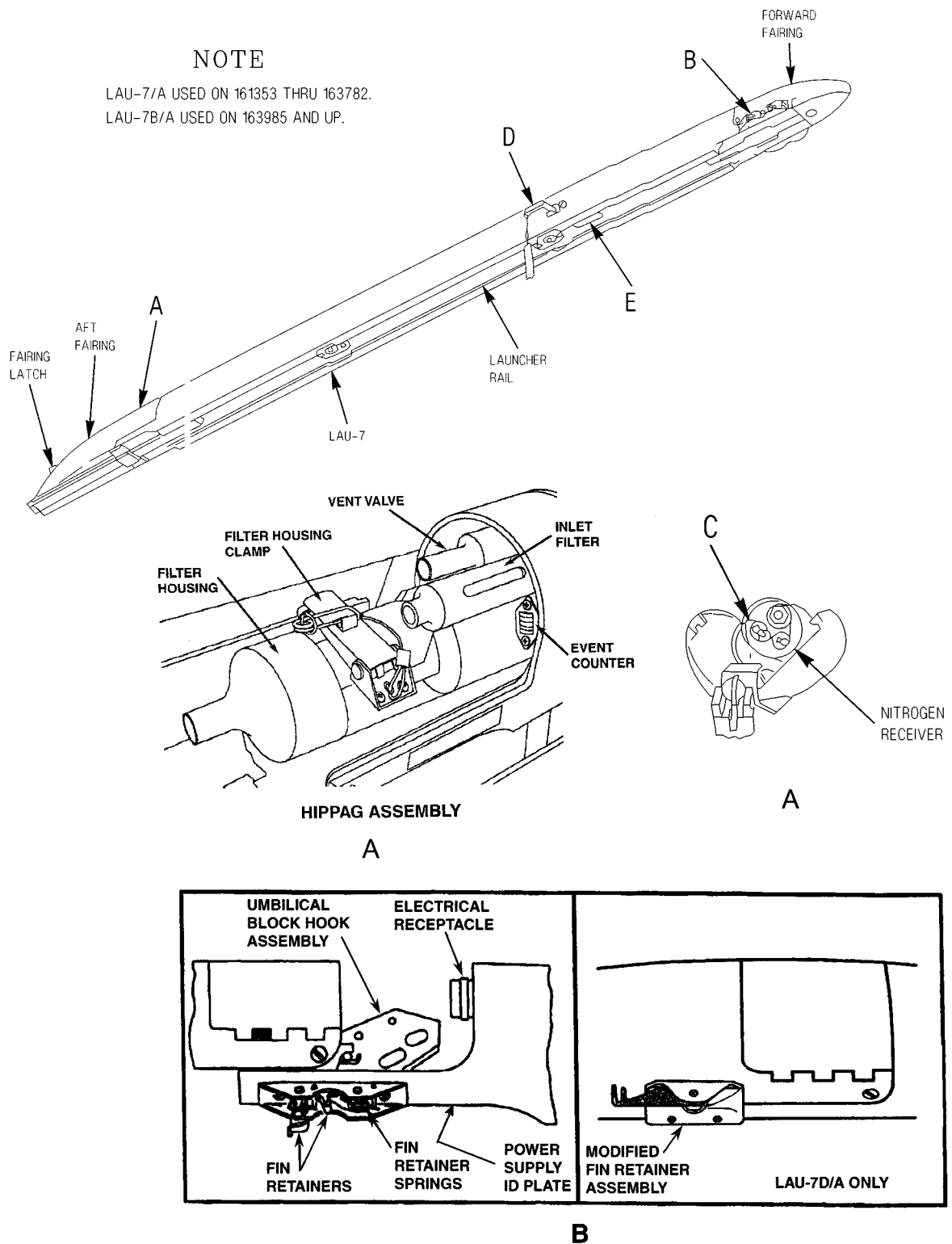
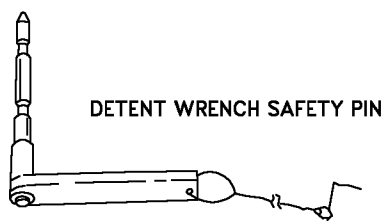
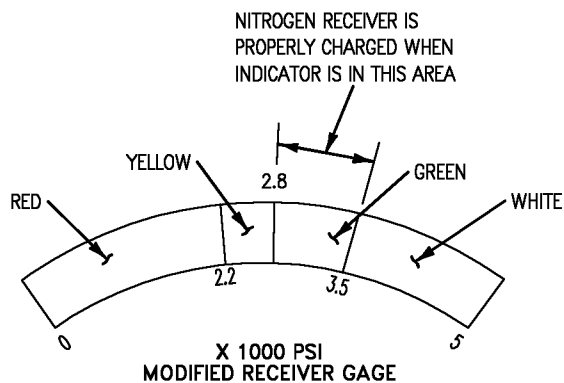
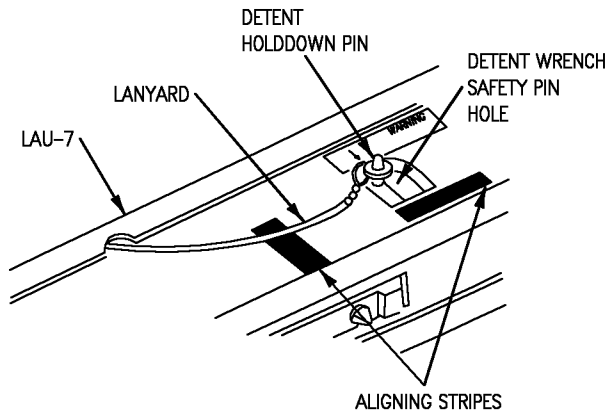
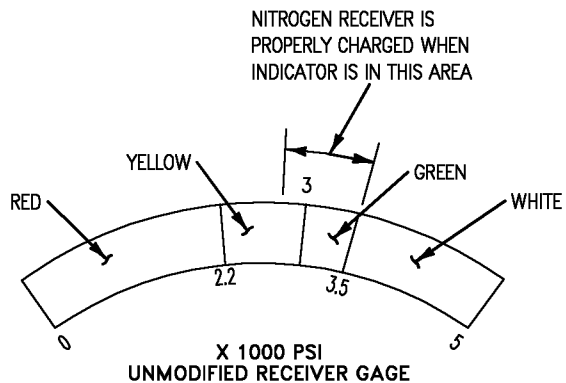
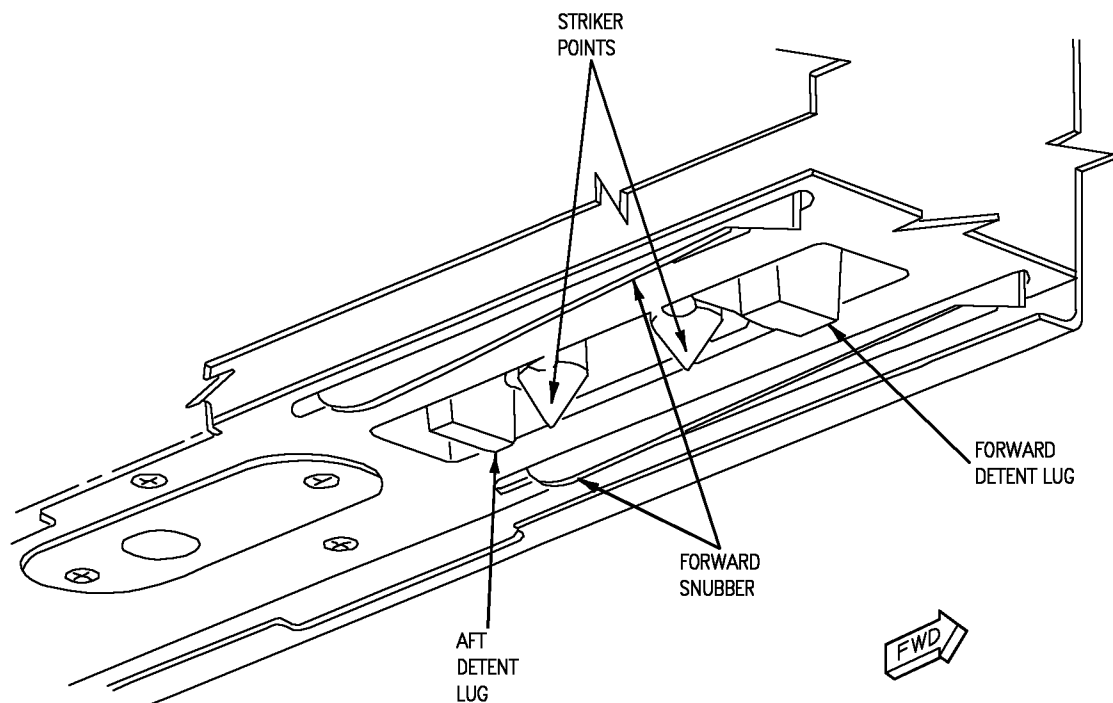


Figure 19-1. LAU-7 Launcher Inspection (Sheet 1 of 2)

AIM-9 Sidewinder Missiles and Instrumentation Packages



D



E

Figure 19-1. LAU-7 Launcher Inspection (Sheet 2)

**WARNING**

(AIM-9X) When loading AIM-9X missile on LAU-7D/A launcher, the modified fin retainer will not be used.

(AIM-9L/M) Launcher fin retainers must be installed and used on all versions of LAU-7 launchers.

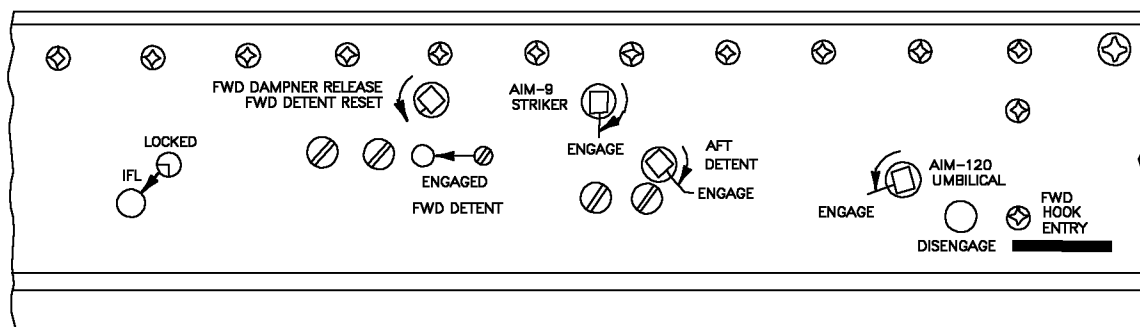
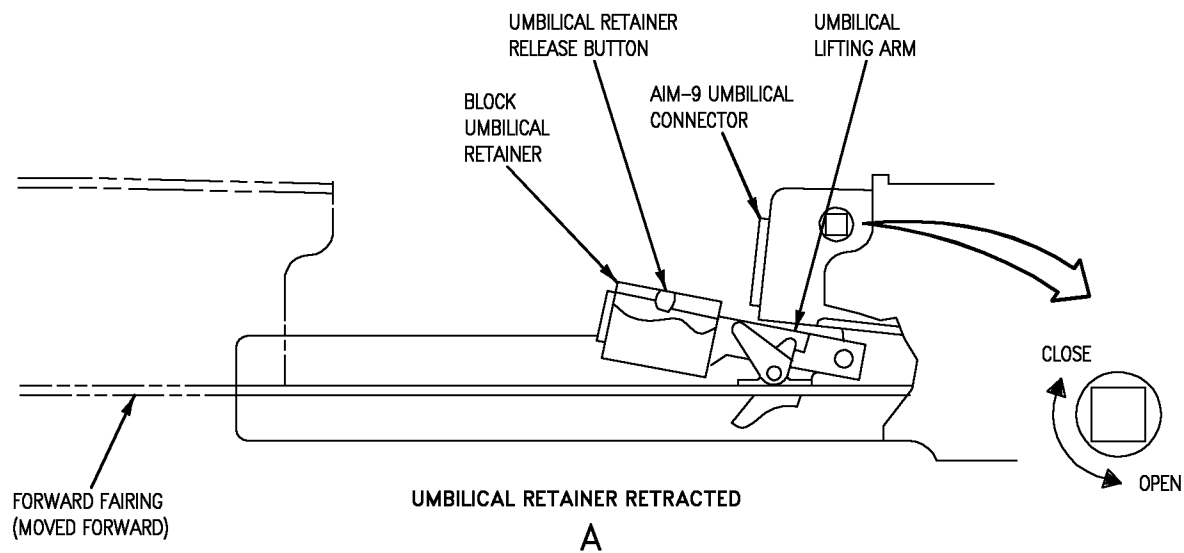
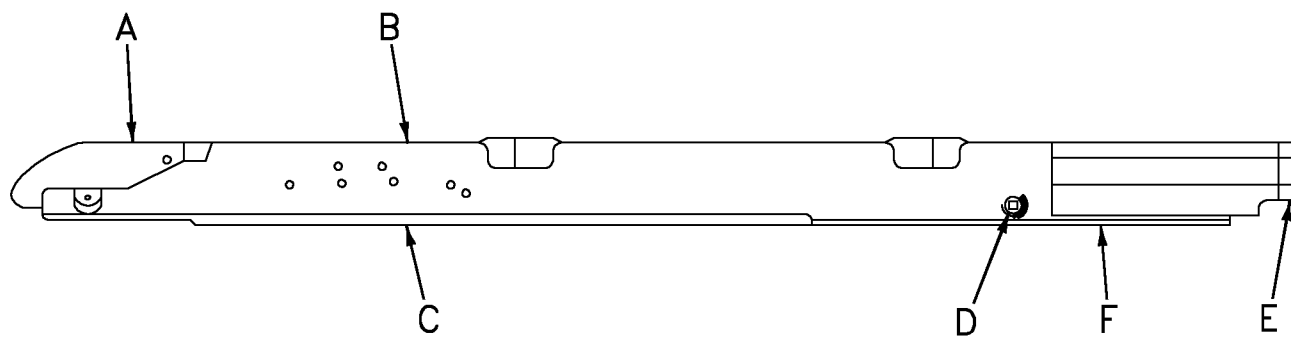
**NOTE**

LAU-7B/A Launchers have a standard type fin retainer assembly.

LAU-7D/A Launchers have modified type fin retainer assemblies.

- l. Verify fin retainer springs/modified fin retainers are not damaged.
- m. Ensure launcher rails are properly lubricated.
6. Prepare/inspect LAU-127A/A launchers for loading as follows (Figure 19-2):
  - a. Visually check launcher for damage.
  - b. Ensure IFL is in LOCKED position.
  - c. Rotate forward fairing actuator to open position and slide fairing forward.
  - d. Verify launcher electrical receptacle and umbilical block retainer are serviceable.
  - e. Ensure fin retainer springs are not damaged.
  - f. (As required) Rotate FWD DETENT to ENGAGED position.
  - g. Ensure AIM-9 STRIKER points are clean, undamaged and retracted.
  - h. Ensure launcher rails are properly lubricated.
  - i. Ensure AFT DETENT retracted.
  - j. Ensure AFT DAMPENER and aft missile stops are retracted.
  - k. (AIM-9L/M) Ensure AIM-120 umbilical protective cover installed.
  - l. Perform the following steps if AIM-9X midbody umbilical is to be used.
    - (1) Rotate AIM-120 UMBILICAL to ENGAGE.
    - (2) Remove AIM-120 umbilical plug cover and verify launcher umbilical is serviceable.

**A1-F18AE-LWS-000**  
**AIM-9 Sidewinder Missiles and Instrumentation Packages**



**Figure 19-2. LAU-127 Inspection (Sheet 1 of 2)**

AIM-9 Sidewinder Missiles and Instrumentation Packages

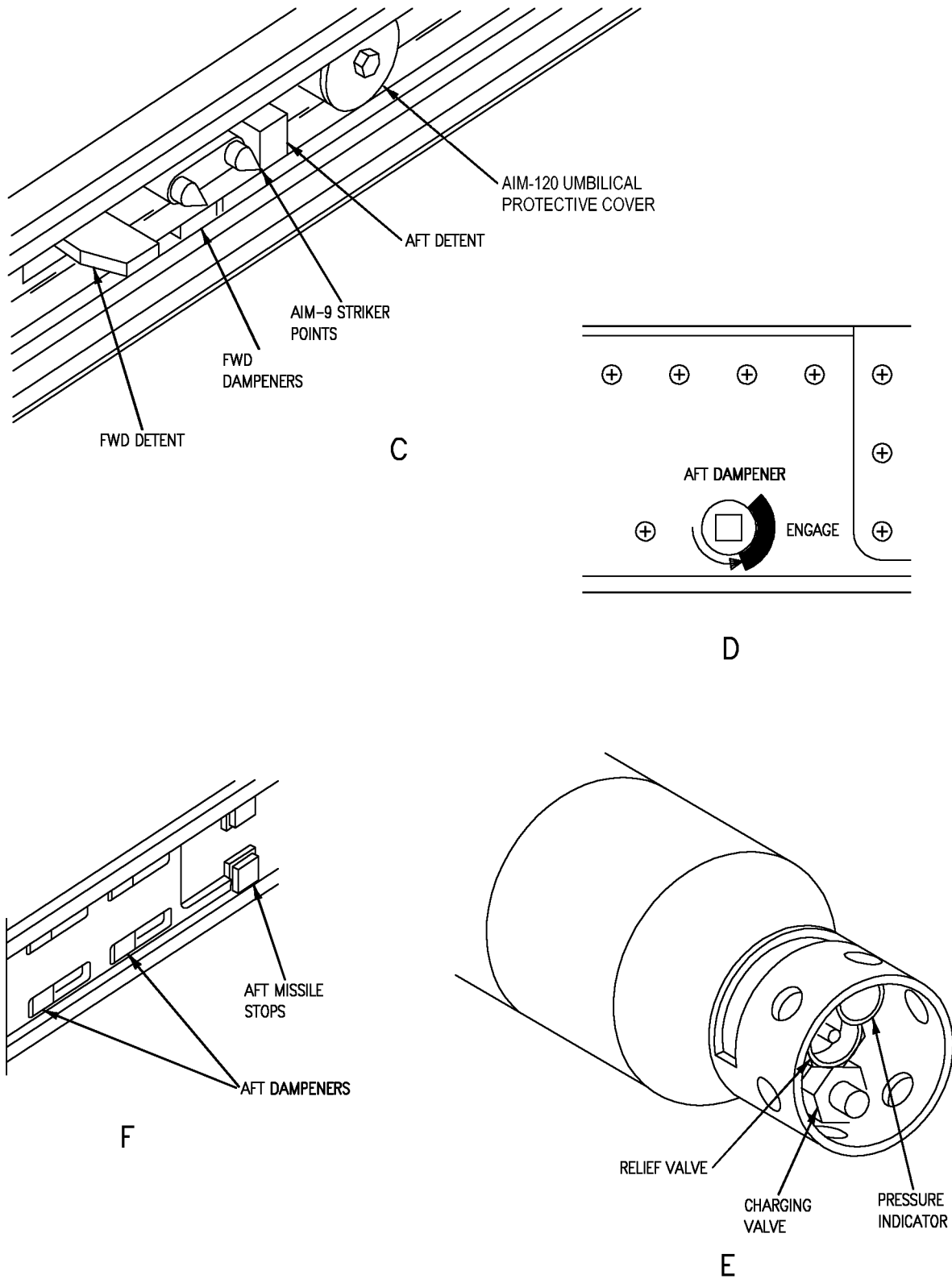


Figure 19-2. LAU-127 Inspection (Sheet 2)

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

- (3) Inspect buffer connector for serviceability as follows:

**NOTE**

Reject buffer connector if pins on missile side are not coated with Braycote-807.

Buffer connector is used for one time firing only.

- (a) Free of corrosion, dirt.
  - (b) Pins not missing, bent, or broken.
  - (c) Pins on missile side are coated with Braycote-807 lubricant.
- (4) Align AIM-9X buffer connector alignment pins with umbilical plug and install buffer connector.
- m. (As applicable) Press AIM-120 UMBILICAL DISENGAGE button, to retract AIM-120 UMBILICAL.
  - n. Remove nitrogen tank cover assembly.

**NOTE**

Nitrogen receiver will be installed at all times to prevent contamination of the launcher coolant system.

(AIM-9X) Nitrogen receiver does not need to be filled with nitrogen. AIM-9X does not require an external nitrogen source.

- o. (AIM-9L/M) Inspect nitrogen receiver assembly pressure indicator to ensure adequate supply of nitrogen and that bottle is secure.
- p. Secure nitrogen tank cover assembly.
- q. Ensure tank assembly locking mechanism, LOCKED.

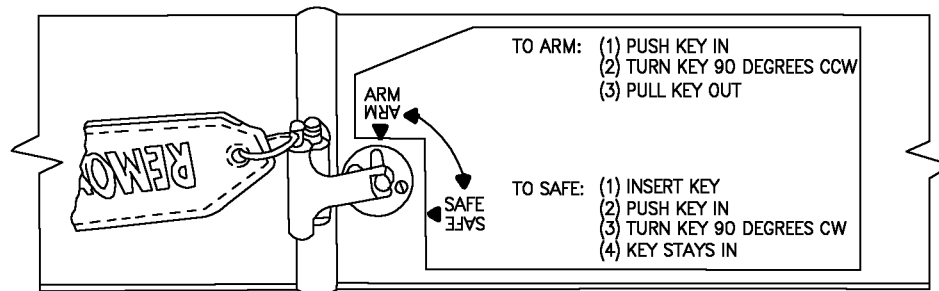
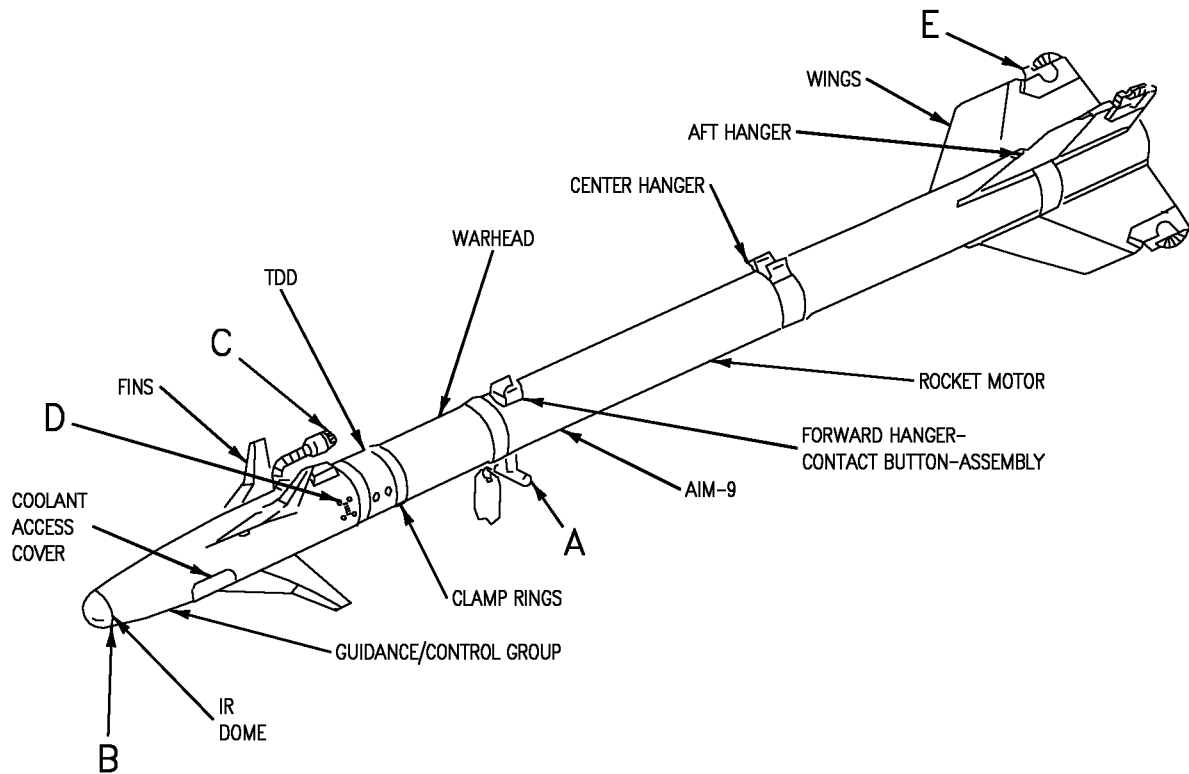
**19-8. WEAPON INSPECTION.**

19-9. Reject missile/pods and notify proper authority if inspection reveals missile/pods are not acceptable for loading. Inspect missiles/pods for loading as follows:

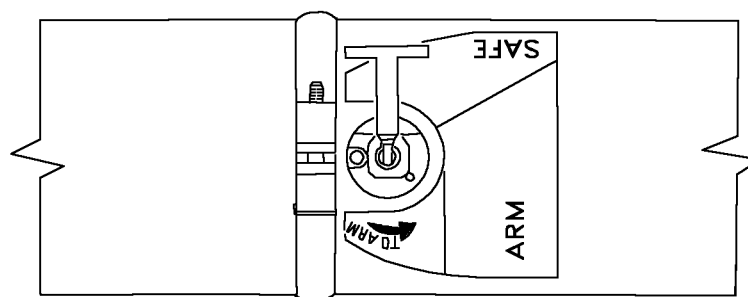
1. AIM-9L/M Inspection (Figures 19-3 and 19-4):

- a. Inspect missile sections for dents, cracks, proper mating, and security of assembly. Ensure no movement exists between sections.

## AIM-9 Sidewinder Missiles and Instrumentation Packages



MK 36 MOD 8/9 OR MK 57 MOD 2 MOTOR



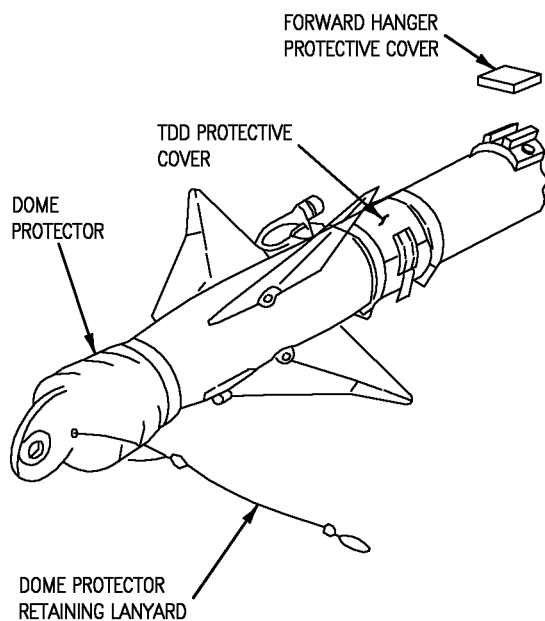
MK 36 MOD 10/11 OR MK 57 MOD 3 MOTOR

ROCKET MOTOR SAFE/ARM MECHANISM/SELECTOR

A

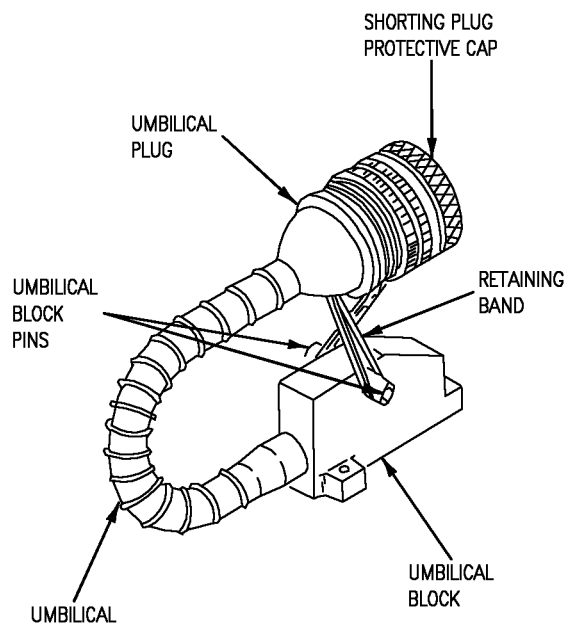
Figure 19-3. AIM-9L/M Missile Inspection (Sheet 1 of 2)

AIM-9 Sidewinder Missiles and Instrumentation Packages



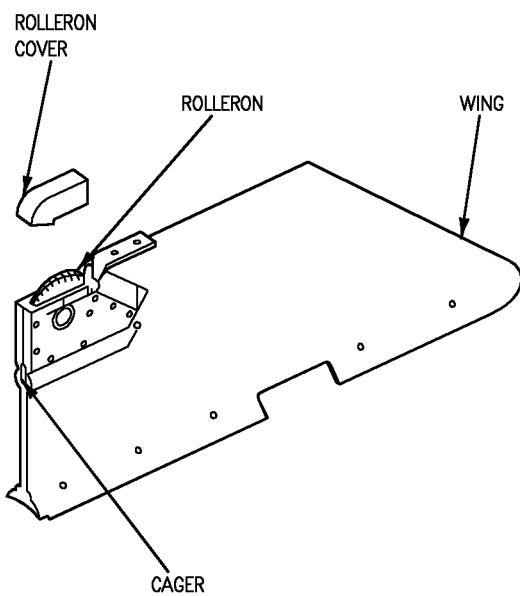
PROTECTIVE COVERS

B



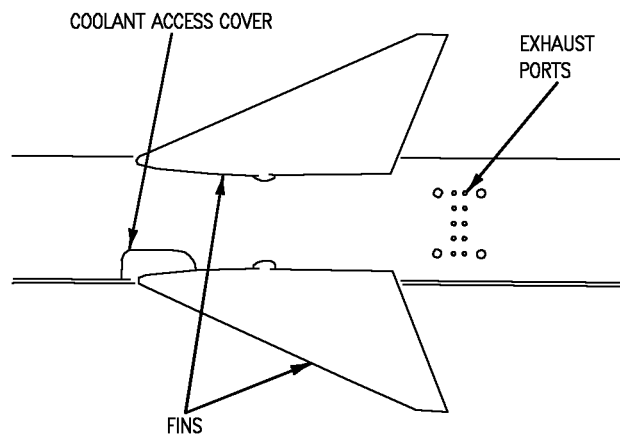
UMBILICAL ASSEMBLY

C



ROLLER-ON ASSEMBLY

E



MISSILE EXHAUST PORTS

D

Figure 19-3. AIM-9L/M Missile Inspection (Sheet 2)



## AIM-9 Sidewinder Missiles and Instrumentation Packages

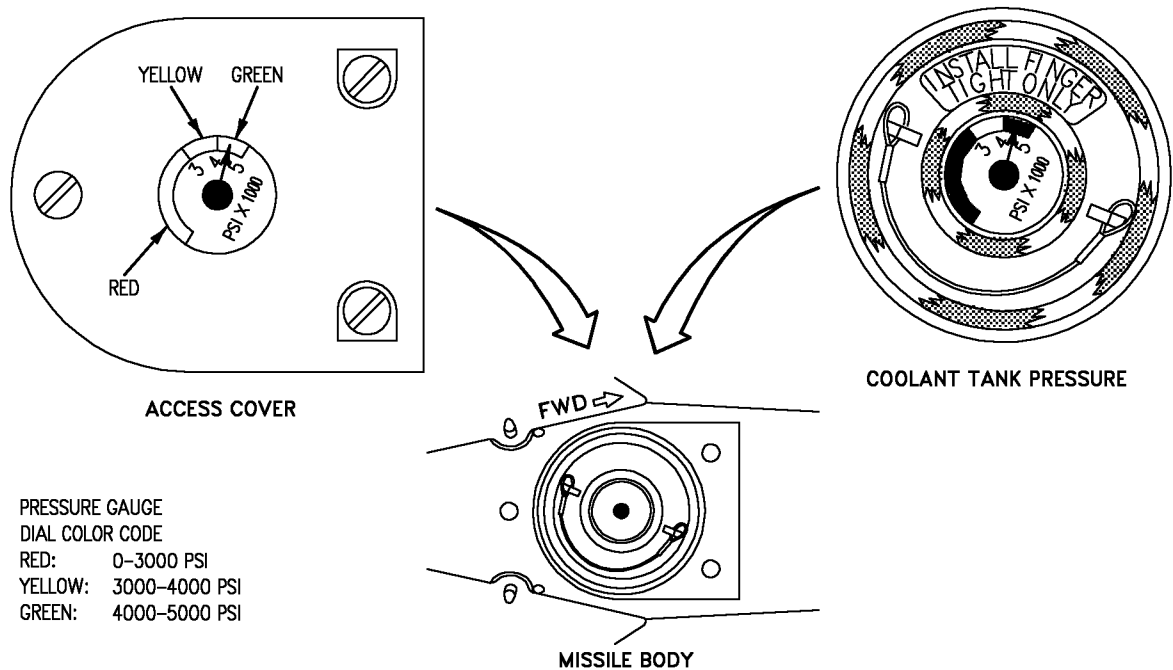


Figure 19-4. TMU-72B Coolant Pressure Tank

## b. Rocket motor:

(1) Mk 36 Mods 8/9 and Mk 57 Mod 2 rocket motor igniter mechanism SAFE/ARM T-handle installed and in SAFE position.

(2) Mk 36 Mods 10/11 and Mk 57 Mod 3 rocket motor igniter mechanism SAFE/ARM selector handle in SAFE position.

## c. (If applicable) Verify rocket motor aft protective cover removed.

## d. Verify that missile dome protector cover is installed.

**WARNING**

Missile dome contains Mercury-Thallium which is silver in color and highly toxic. If missile dome is damaged, avoid contact and notify proper authority.

**CAUTION**

Dome protector must be replaced immediately after dome inspection.

## e. Remove missile dome protector and verify dome is not broken, cracked, scratched or pitted.

## f. Reinstall dome protector.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

g. (AIM-9L/M) Verify coolant cap and coolant pressure tank access covers are installed and secured.

**CAUTION**

Reject missile if umbilical block is loose. Do not attempt to tighten umbilical block mounting screw.

- h. Inspect missile umbilical for security, safety wired and aligned with missile hangers.
- i. Verify missile umbilical connector not damaged and shorting plug protective cap is installed.
- j. Verify umbilical is properly stowed.

**CAUTION**

If soot is evident around gas exhaust port, missile must be rejected.

- k. Verify exhaust ports are clean and have no evidence of soot.
- l. (If applicable) Charged TMU-72B coolant tank installed (Figure 19-4).

**WARNING**

Coolant pressure tank contains high pressure gas.

- (1) Ensure coolant tank pressure gauge indicates positive pressure (reads yellow or green).
- (2) (If applicable) Loosen access cover screws and remove cover from GCS.
  - (a) (GCS) Remove probe sealing cap from coolant inlet probe; retain probe cap.
  - (b) (GCS) Verify coolant inlet probe free of oil, dirt, or contamination.
- (3) (If applicable) Install TMU-72B as follows:
  - (a) Remove tape from TMU-72B.
  - (b) Install TMU-72B and tighten finger tight.

**CAUTION**

Overtightening forward screw may damage access cover.

- (4) Reinstall GCS access cover as follows:
  - (a) Tighten aft screws until snug.
  - (b) Torque forward screw to 20 ±3 inch-pounds.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

- m. Verify fin attaching screws not damaged and fins move freely.
- n. (If applicable) Remove TDD cover.
- o. Verify TDD windows are clean and undamaged.

**WARNING**

Do not touch contact buttons.

- p. (If applicable) Remove forward hanger protective cover and visually verify contact buttons are clean and not damaged; hangers secure and properly lubricated.
- q. Install forward hanger protective cover.
- r. Inspect wings as follows:

**CAUTION**

Minimal amount of delamination/chipping of wing surface is acceptable, provided the delamination/chipping is no more than 25% of the wing surface area.

- (1) Wings not cracked, surface area delamination/chipping within acceptable limits.
- (2) (If applicable) Remove rolleron protective cover(s).
- (3) Verify rolleron wheels move freely.
- (4) Uncage rolleron assembly.

**NOTE**

To check rolleron assembly, move rolleron assembly from side-to-side through entire range of travel. If the damper has little or no resistance to motion or if damper does not have uniform and smooth resistance to motion, reject weapon.

- (5) Check rolleron assembly for damage, proper movement.
  - (6) Cage rolleron assembly.
  - s. (If applicable) (CATM-9) Two snubber clamp assemblies available and not damaged.
2. AIM-9X Inspection (Figure 19-5):
- a. Inspect missile sections for dents, cracks, proper mating, and security of assembly. Ensure no movement exists between sections.

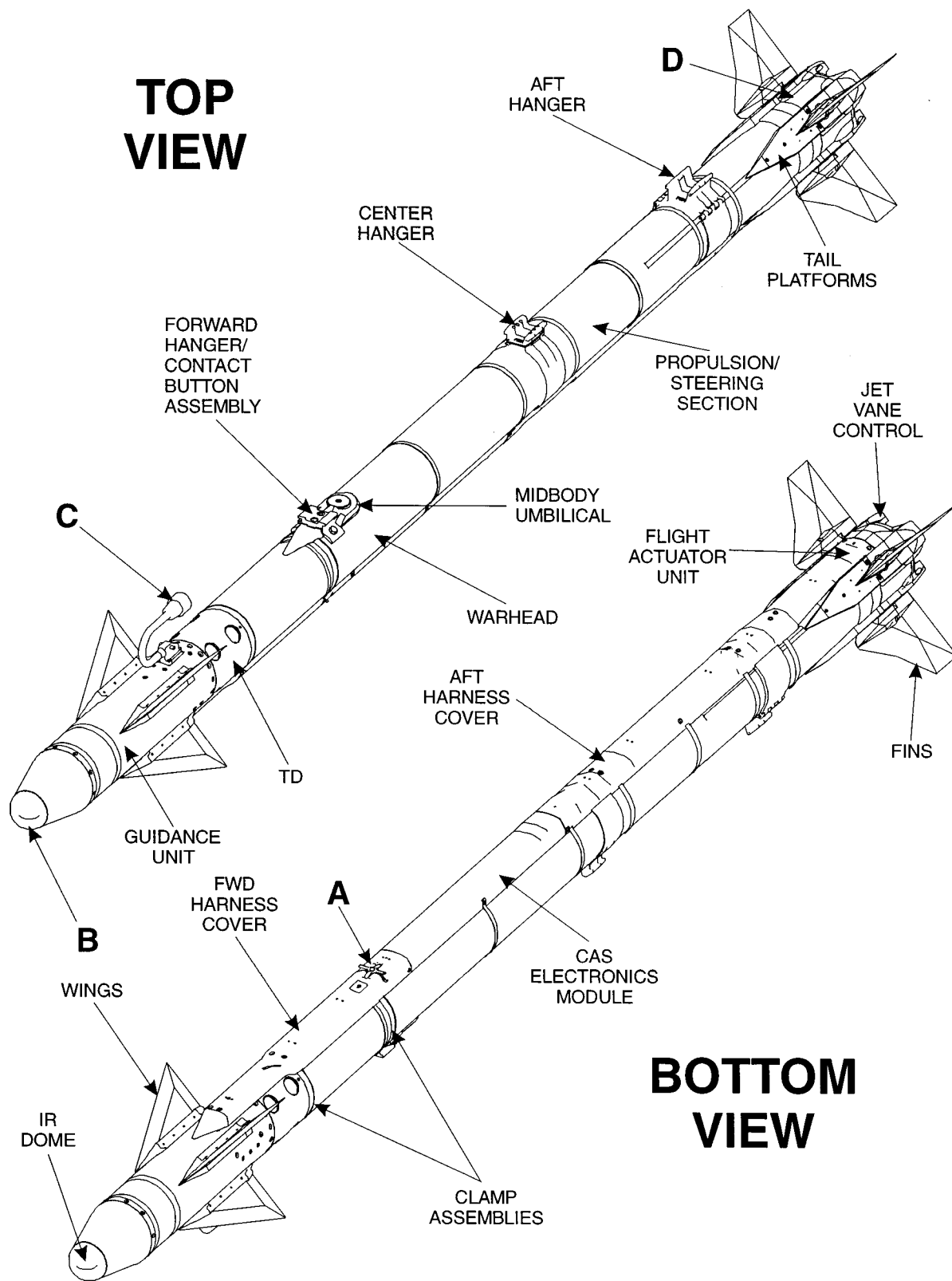


Figure 19-5. AIM-9X Missile Inspection (Sheet 1 of 3)

## AIM-9 Sidewinder Missiles and Instrumentation Packages

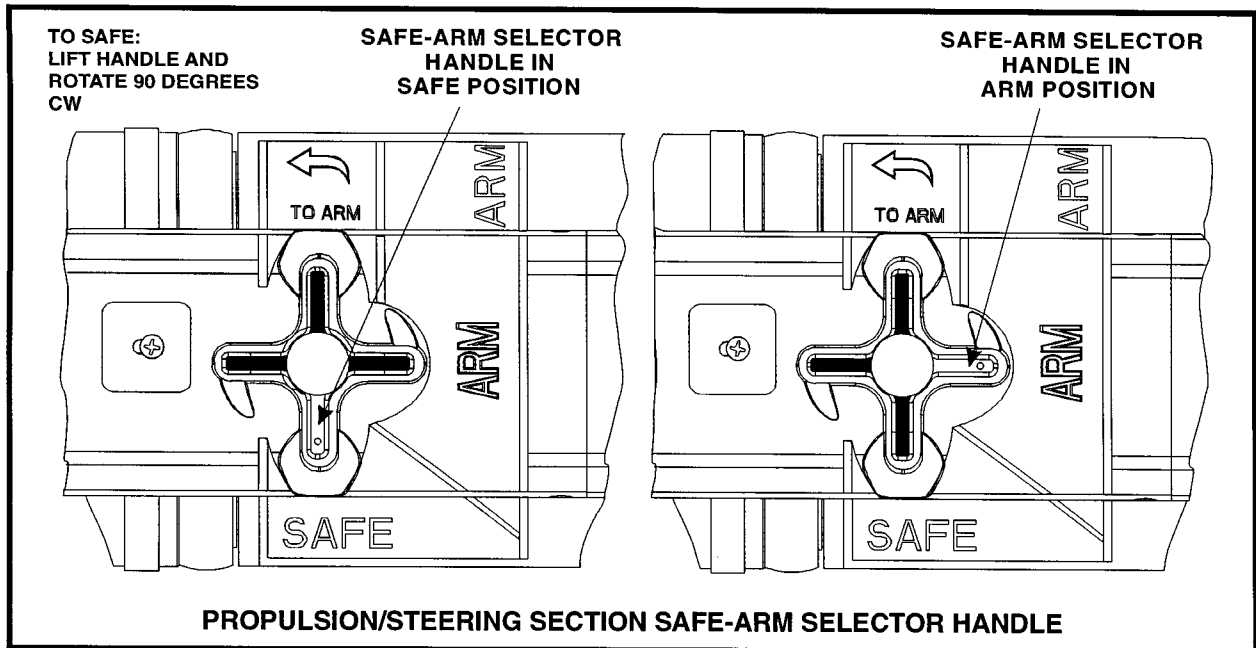
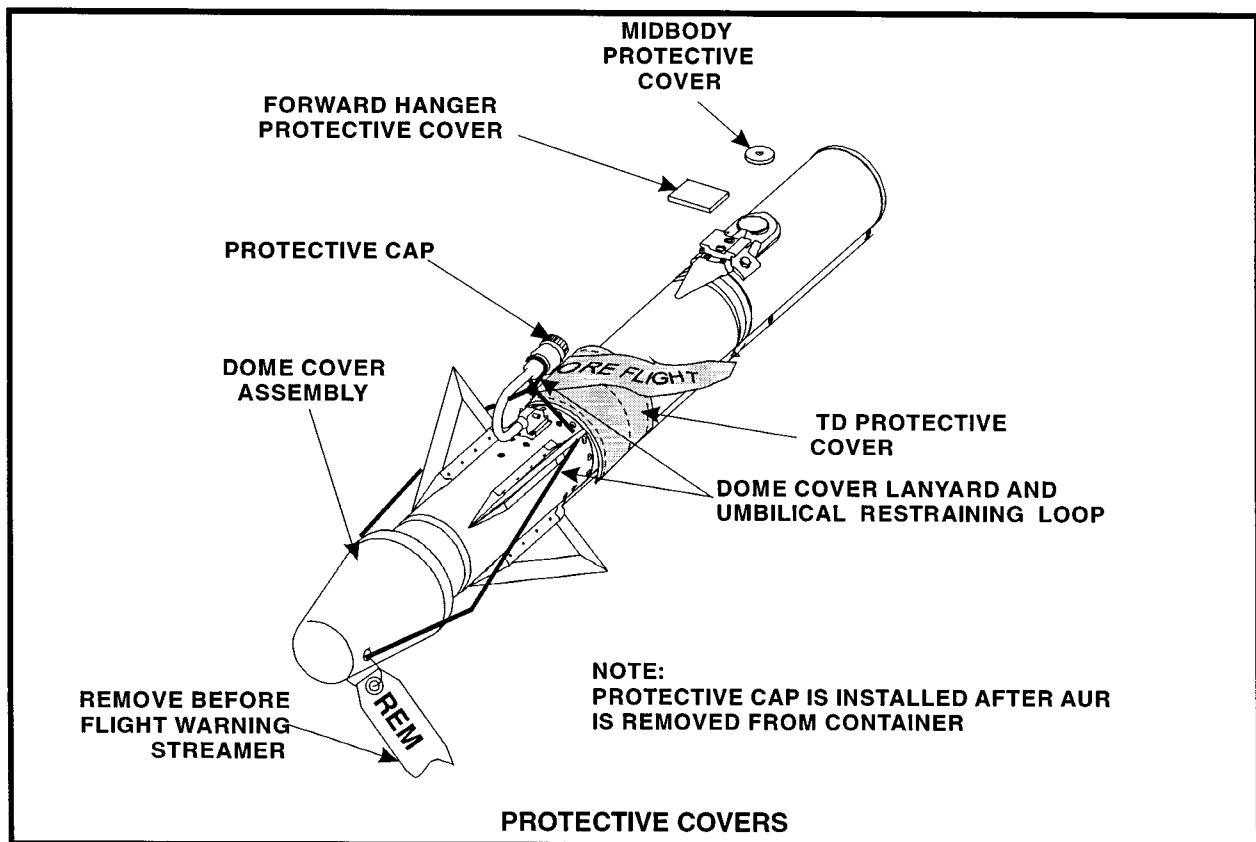
**A****B**

Figure 19-5. AIM-9X Missile Inspection (Sheet 2)

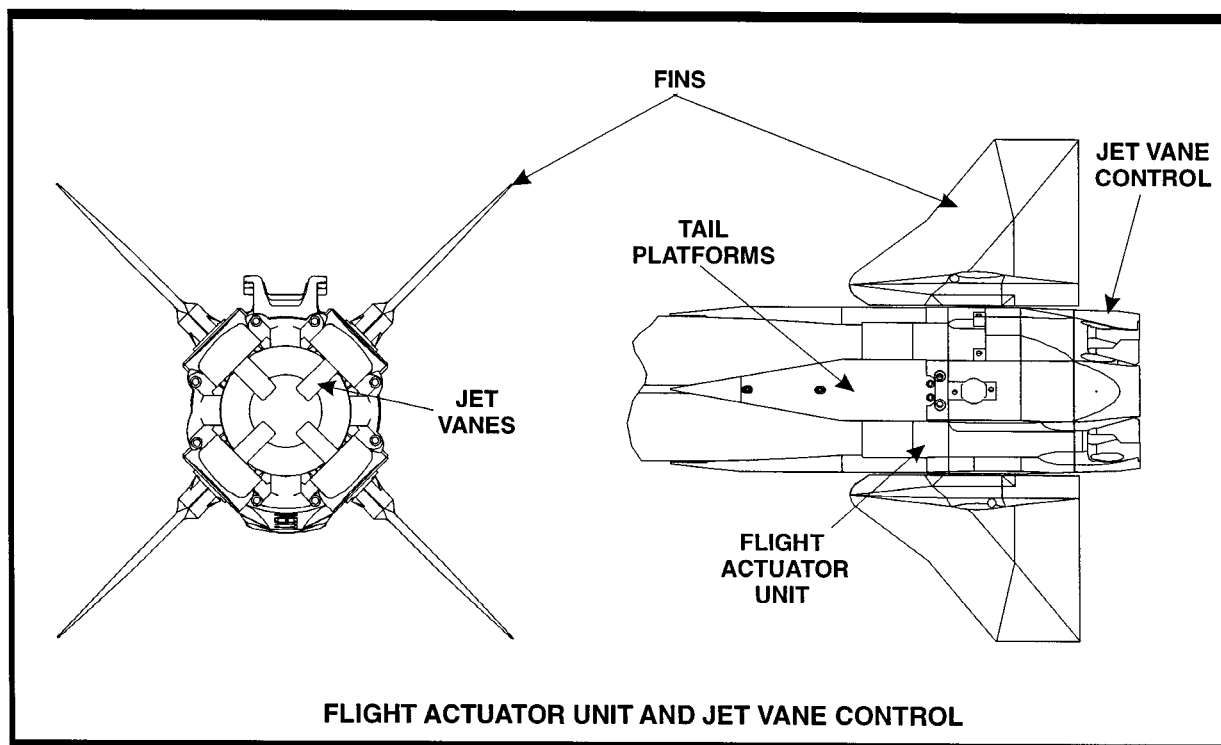
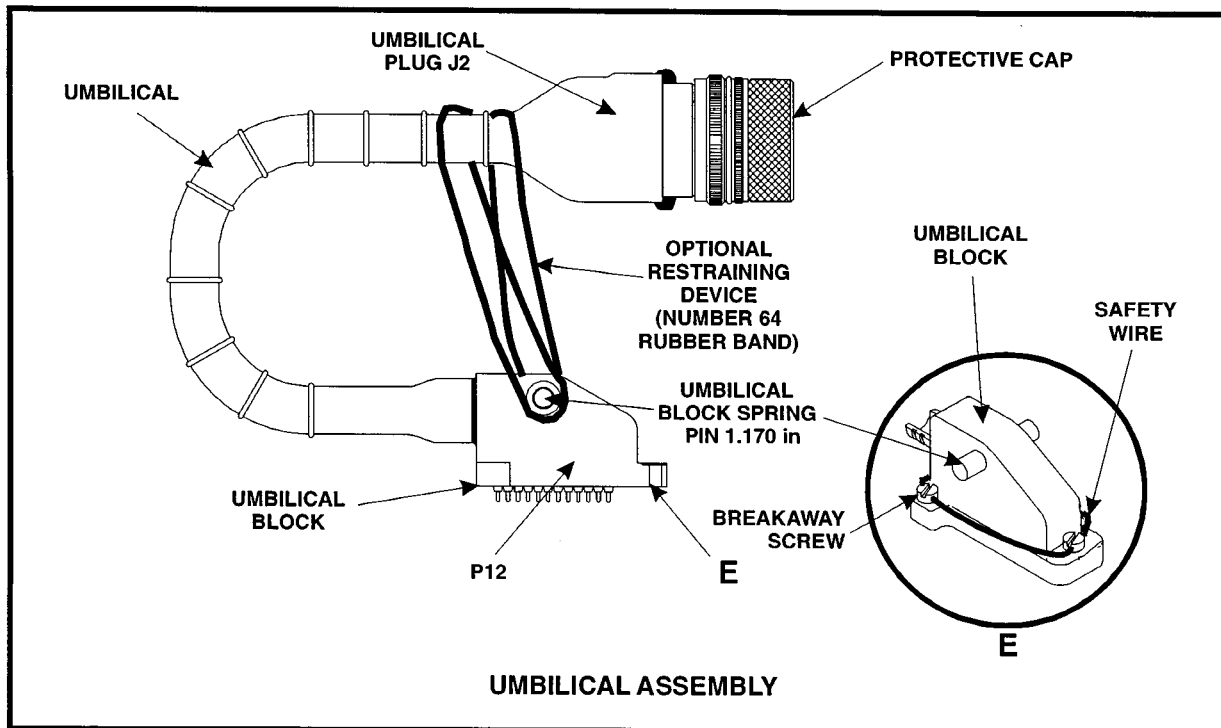


Figure 19-5. AIM-9X Missile Inspection (Sheet 3)

## AIM-9 Sidewinder Missiles and Instrumentation Packages

**WARNING**

If propulsion/steering section SAFE-ARM selector handle indicates ARM, safe propulsion/steering section and notify proper authority.

b. Verify propulsion/steering section SAFE-ARM selector handle is locked in the SAFE position. If not, pull SAFE-ARM selector handle and maintain pull pressure. Rotate handle 90 degrees clockwise and release pull pressure to lock in SAFE position (Figure 19-5).

c. Verify that missile dome cover is installed.

**NOTE**

Minor scratches on the dome are acceptable.

d. Remove missile dome cover and verify dome is not broken, cracked, scratched or pitted.

e. Reinstall dome cover.

**CAUTION**

Reject missile if umbilical block is loose. Do not attempt to tighten forward umbilical block mounting screws.

f. Inspect missile umbilical for security, safety wired and aligned with missile hangers (Figure 19-5).

g. Verify missile umbilical connector not damaged and protective cap is installed.

h. Verify umbilical is properly stowed.

i. Inspect wings for dents, cracks, distortion, and/or corrosion.

j. Verify wing attaching screws are not damaged and/or loose.

k. (If applicable) Remove TD cover.

l. Verify TD windows are clean and undamaged, reinstall TD cover.

**WARNING**

Do not touch contact buttons.

m. (If applicable) Remove forward hanger protective cover and visually verify contact buttons are not damaged.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

**CAUTION**

Missile contains electrostatic sensitive devices. Do not touch connector electrical contacts when protective cap/cover is removed. Damage to missile may occur.

**NOTE**

If missile is to be loaded on a LAU-7D/A, skip Steps n. thru p.

- n. Remove mid-body protective cover and inspect missile mid-body connector for damage.

**NOTE**

If missile mid-body connector is not coated with Braycote-807, reject missile for loading and notify proper authority.

- o. Ensure missile mid-body connector pins are coated with Braycote-807 lubricant.
- p. Reinstall mid-body protective cover.

**CAUTION**

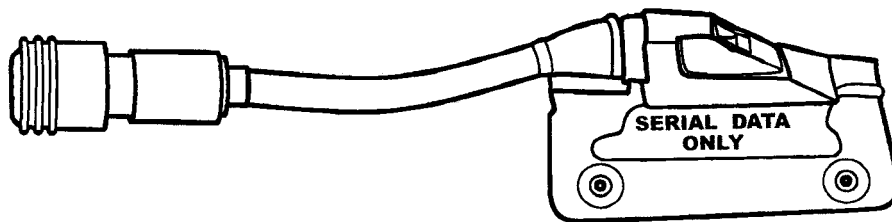
Do not attempt to move fins or damage to flight actuation unit (FAU) may result.

- q. Inspect fins for dents, cracks, distortion, and/or corrosion.
  - r. Inspect forward and aft harness covers for dents, cracks, and/or distortion.
  - s. Inspect Control Actuation System (CAS) electronics (ELX) for dents, cracks, distortion, and/or corrosion.
  - t. Inspect FAU and Jet Vane Control (JVC) for dents, cracks, distortion, and/or corrosion.
  - u. (If applicable) (CATM-9X) Two snubber clamp assemblies available and not damaged.
3. Instrumentation Package Inspection:
- a. Inspect pod sections for dents, cracks, proper mating, and security of assembly. Ensure no movement exists between sections.



**AIM-9 Sidewinder Missiles and Instrumentation Packages**

- b. (TACTS) Verify air data probe cover is installed.
- c. (TACTS) Remove air data probe cover and verify probe is not damaged. Reinstall cover
- d. (As applicable) Remove antenna(s) protective covers and verify antenna(s) are not damaged. Reinstall covers.
- e. Inspect pod umbilical for security and alignment with pod hangers (Figure 19-6).
- f. Pod umbilical connector is not damaged and shorting plug protective cap is installed.
- g. Verify pod hangers secure and not damaged.
- h. (Wing tip) Ballast weights installed on pod.
- i. (LATR) Antennas available for installation after loading.
- j. Two snubber clamp assemblies available and not damaged.



**Figure 19-6. Instrumentation Package Umbilical**

**19-10. WEAPON LOADING.**

19-11. **LAUNCHER PREPARATION.** Prepare launchers for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 19-6) and Weapon Inspection (Paragraph 19-8) have been completed.

2. Verify that aircraft is grounded.

3. (If applicable) Verify that power is removed from aircraft.

4. Position all armament switches in accordance with Table 5-1.

5. LAU-7:

a. Ensure detent wrench safety pin is installed.

b. Open aft fairing latch and verify rear snubbers are open.

6. LAU-127A/A:

a. Ensure IFL, LOCKED.

b. Ensure FWD DETENT in ENGAGED position.

c. Verify AIM-9 STRIKER, AFT DETENT and AFT DAMPENER are retracted.

d. (AIM-9X, if applicable) Verify serviceable AIM-9X buffer connector installed.

e. (If applicable) Verify AIM-120 UMBILICAL retracted.

**CAUTION**

(AIM-9X) Missile contains electrostatic sensitive devices. Do not touch connector electrical contacts when protective cap/cover is removed. Damage to missile may occur.

f. (AIM-9X, If applicable) Remove mid-body protective cover.

**NOTE**

(AIM-9X) The primary umbilical cable restraining device is the loop integrated with the dome cover lanyard. The optional restraining device is a rubber band.

7. Unfasten umbilical cable from restraining device (Figure 19-3 and 19-5). (AIM-9X) Place loop from dome cover lanyard on any wing opposite the umbilical cable.

8. Remove forward hanger protective cover.

9. Position handling equipment near station to be loaded.

10. (If applicable) Remove weapon tiedown straps securing missile/pod to handling equipment.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

11. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

19-12. **LAUNCHER LOADING.** Load missiles as follows:

**CAUTION**

(AIM-9L/M/CATM-9L/M) Do not use rollerons, fins, TDD window or dome area for lifting missile.

(AIM-9X/CATM-9X) Do not use dome, umbilical cable, wings, TD windows, fins, FAU, or JVC for lifting missile.

(Instrumentation Packages) Do not use air data probe/antennas for lifting.

**NOTE**

Route umbilical clear of launcher during loading.

1. LAU-7:

a. Raise missile/pod until missile/pod hangers enter loading slots in launcher rail. Slowly slide missile forward until forward hanger contacts aft detent lug.

b. Rotate detent wrench safety pin to raise detent.

**CAUTION**

Do not exert excessive force when sliding missile/pod forward. The front of the missile hanger may cause front lug of launcher detent to rise and come to rest on top of missile hanger.

**NOTE**

Route umbilical clear of launcher during loading.

c. While guiding umbilical cable, slide missile/pod forward until front edge of forward hanger is within black stripe on launcher.

d. Lower detent on to missile/pod hanger after missile firing contacts are directly below the striker points on the launcher detent.

e. Ensure missile/pod hanger contacts forward detent lug and aft detent lug snaps into place.

**NOTE**

Space between vertical edges of missile/pod forward hanger and launcher detent lugs is permissible.

f. Visually inspect detent and verify forward and aft lugs restrain missile/pod in both directions.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

- g. Verify forward snubbers engaged.
- h. Close and lock aft fairing latch.

**CAUTION**

Do not exert excessive force to rock missile/pod. Snubber loosening or damage to missile/wings may occur.

- i. Gently rock aft end of missile/pod to verify snubbers have engaged missile hangers.

**CAUTION**

Binding of detent holddown pin indicates incorrect installation, which could result in loss of missile/pod.

**NOTE**

Launcher detent holddown pin must be installed in top side of launcher.

- j. Install launcher detent holddown pin.

**NOTE**

When training umbilical is installed, umbilical block hooks will not engage umbilical blocks.

- k. (As applicable) Attach launcher umbilical block hooks to missile by applying pressure until hooks snap into place over umbilical block pins.

2. LAU-127A/A:

**CAUTION**

(AIM-9X) Missile contains electrostatic devices. Do not touch connector electrical contacts when protective cap/cover is removed. Damage to missile may occur.

**NOTE**

Route umbilical clear of launcher during loading.

- a. Raise missile until hangers enter loading slots in launcher rail. Slowly slide missile forward until missile hanger contacts forward detent.
- b. Maintain forward pressure on missile and rotate AFT DETENT to ENGAGE.

## AIM-9 Sidewinder Missiles and Instrumentation Packages

**CAUTION**

Do not exert excessive force to rock missile. Dampener loosening or damage to wings may occur.

- c. While rocking missile, rotate AFT DAMPENER to ENGAGE, ensure missile secure.

**CAUTION**

(AIM-9X) Buffer connector must be aligned with missile mid-body umbilical receptacle to prevent damage to pins.

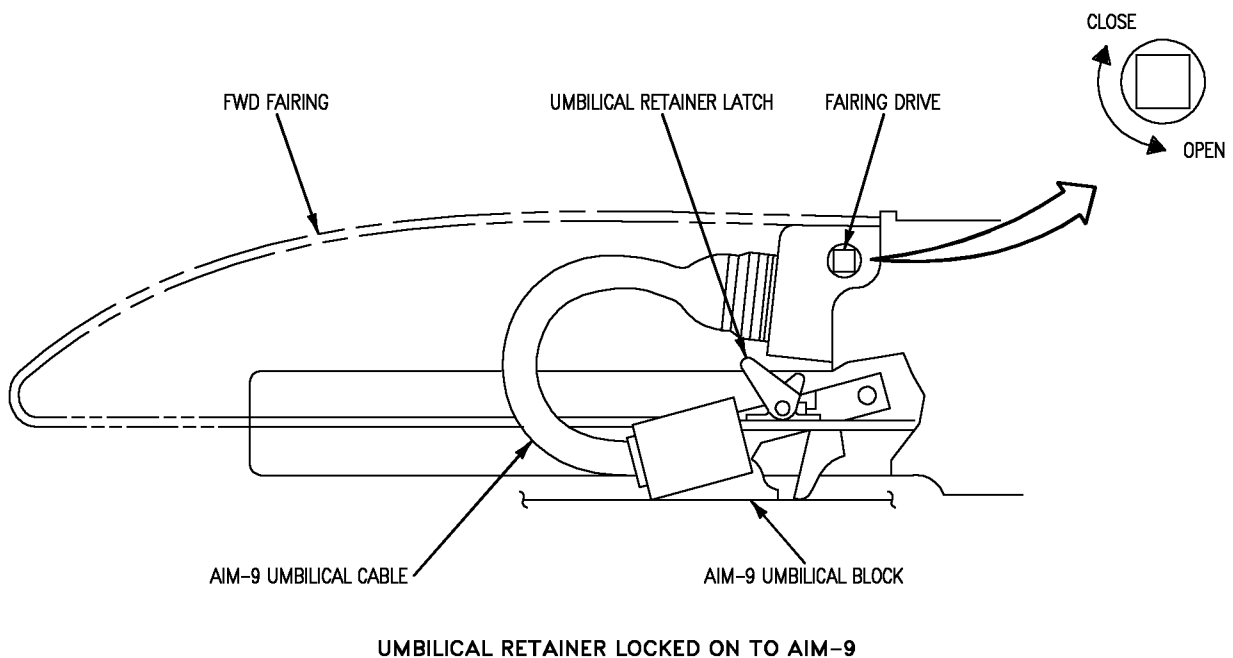
- d. (AIM-9X) Rotate AIM-120 UMBILICAL to ENGAGE position.
- e. Rotate AIM-9 STRIKER to ENGAGE.

**NOTE**

When training umbilical is installed, umbilical retainer will not engage umbilical blocks.

- f. (AIM-9L/M) Press umbilical retainer release button, position and lower retainer over missile umbilical block pins and slide retainer back to the locked position (Figures 19-2 and 19-7).

3. (AIM-9L/M) Remove shorting plug cap from missile umbilical connector, and connect umbilical connector to launcher receptacle.



**Figure 19-7. LAU-127 Umbilical Retainer**

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

4. (As applicable) Close forward fairing.

<b>CAUTION</b>
----------------

(AIM-9L/M) Use only finger pressure to engage fin retainer springs/fin retainers to avoid damage to fin retainer assembly.

5. (AIM-9L/M) (As applicable) Secure fins by opening fin retainer, rotate fins to neutral position and release retainer to engage missile fins.

6. (LATR Pod) (If applicable) Install antenna.

7. (If applicable) CATM-9/Instrumentation Package (Wing Tip only):

**NOTE**

Snubber clamp assemblies are for shore based use only.

(CATM-9) Snubber clamps are required on LAU-7/A6, P/N 58A164H874, P/N 139040-1 with ECP 87, LAU-7B/A, P/N 3188AS100 with AAC 900.

(CATM-9) Snubber clamps are not required on LAU-7B/A-1, P/N 3188AS200; LAU-7/A-7, P/N 58A164H900 with ECP 1099.

(Instrumentation Package) Snubber clamps are required for all versions of the LAU-7 unless noted otherwise by flight clearance, tactical manual, or operational order.

Snubber Clamp assembly teflon blocks are offset on bolt, assembly must be installed with bolt next to rocket motor.

Retorque snubber clamps after each flight.

- a. (CATM-9L/M/Instrumentation Package) Install one snubber clamp assembly 1 inch in front of the rocket motor wing rib (Mk 57 all Mods) or 1 inch in front of the aft hanger (MDU-27/Instrumentation Package) (Figure 19-8).

- b. (CATM-9X) Install one snubber clamp assembly 1 inch in front of aft hanger (Figure 19-8).

- c. (CATM-9L/M/Instrumentation Package) Install one snubber clamp assembly 1 inch behind the forward hanger.

- d. (CATM-9X) Install one snubber clamp assembly 1 inch behind the mid-body umbilical assembly.

- e. Torque snubber clamp assembly nuts to 35 inch-pounds.

8. Perform missile tone/BIT/pod power check as follows:

- a. Connect headset.
- b. Position all armament switches in accordance with Table 5-1.
- c. Apply electrical power to aircraft.

## AIM-9 Sidewinder Missiles and Instrumentation Packages

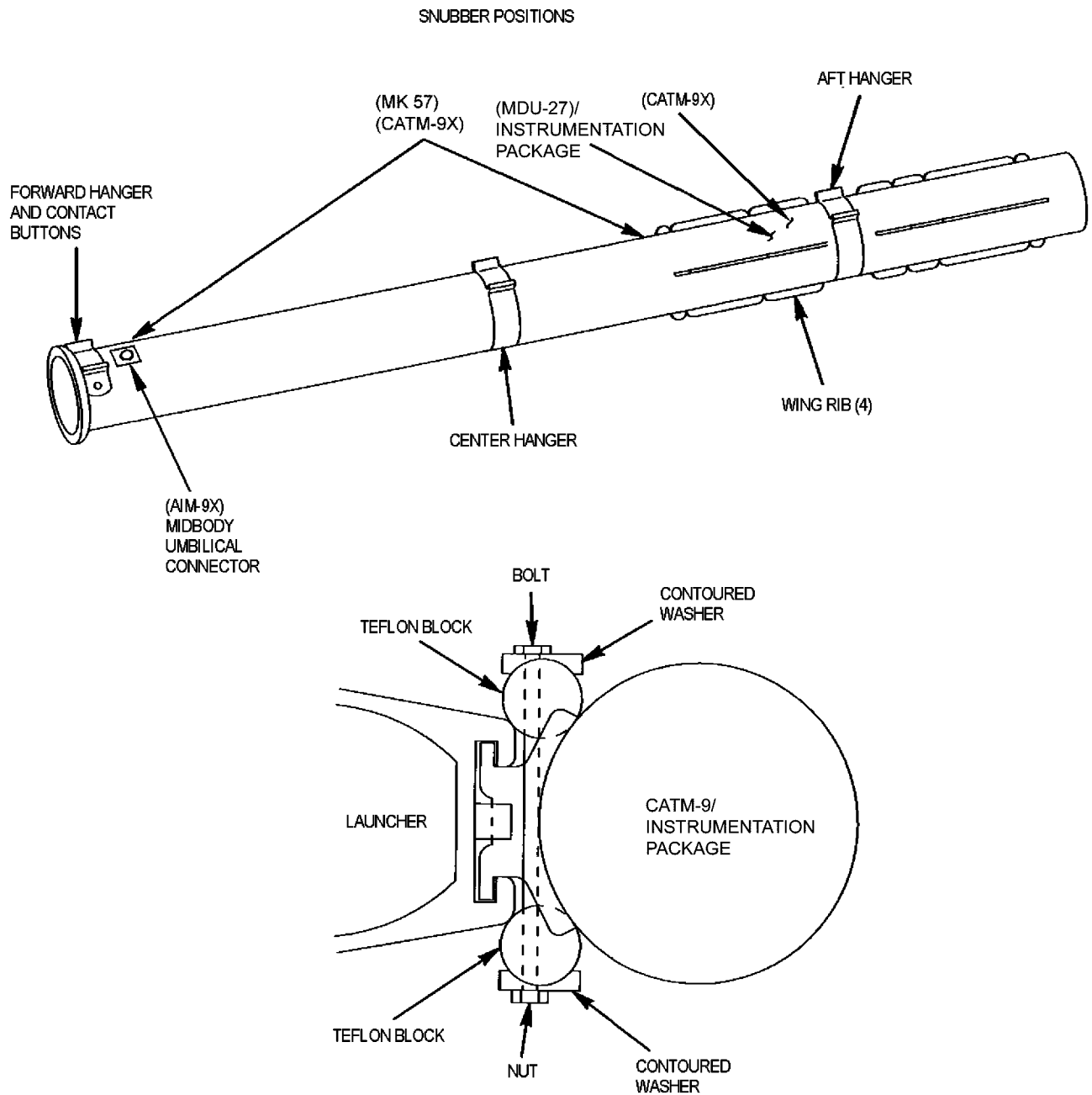


Figure 19-8. Snubber Clamp Assembly

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

- d. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- e. On the GND PWR control panel, position EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds. Set switch 4 to A ON.
- f. Position left and right DDI power switches to DAY (allow warm-up time).
- g. On the left DDI, press and release MENU pushbutton until BIT pushbutton option is displayed.

**NOTE**

SMS BIT must be complete prior to performing missile tone check.

(OFP 10A and 12A) SMS GO is displayed when BIT complete.

(OFP 91C, 13C, 13C SMUG, 15C and 17C) PBIT GO is displayed below STORES pushbutton option when BIT complete.

- h. On the left DDI, press and release BIT pushbutton option.
- i. On the right DDI, press and release MENU pushbutton until STORES pushbutton option is displayed.
- j. On right DDI press STORES pushbutton.
- k. (AIM-9L/M) Perform the following:
  - (1) On the map gain control panel, position IR COOL switch to ORIDE.
  - (2) Adjust WPN VOL control to LOW.
  - (3) Select A/A.
  - (4) Select missile station to be checked.
  - (5) Remove missile dome protector.

**CAUTION**

If gimbal is uncaged (centered in dome) missile is down.

- (6) Using the TTU-304/E tester perform the following:
  - (a) Turn tester on.
  - (b) Verify that bulb is on by looking through peep hole on side of tester.



**AIM-9 Sidewinder Missiles and Instrumentation Packages**

(c) Position tester approximately 4 to 6 feet in front of missile dome and slowly move tester across field of view of missile.

(d) Adjust WPN VOL control as required so missile tone is heard in headset.

(e) Install missile dome protector.

(f) Turn tester off.

(g) Adjust WPN VOL control to LOW.

(7) On the map gain control panel, position IR COOL switch to NORM.

l. AIM-9X perform the following:

(1) Verify 9X displayed at each loaded station, when initial SMS and AIM-9X BIT complete.

m. (As applicable) Perform TACTS pod postload power check as follows:

(1) Verify DS1 (115 vac) and DS2 (+28 vdc) lamps on aft end of pod - ON.

n. Position left and right DDI power switches to OFF.

o. On GND PWR control panel, position EXT PWR switch to OFF.

p. Remove electrical power from aircraft.

q. (If applicable) Remove cooling air from aircraft.

r. Disconnect headset.

9. (If applicable) Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).

10. Place WEAPON LOADED sign in cockpit.

11. Remove tools and handling/loading equipment from area.

**19-13. POSTLOADING INSPECTION.**

19-14. Perform Postloading Inspection for missile(s)/pods loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.

2. WEAPON LOADED sign in cockpit.

3. BRU-32 configured with LAU-115 launcher:

a. Ground safety handles in LOCKED position on loaded stations.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

b. Cartridges installed in all loaded bomb racks, cartridge retainers and auxiliary cartridge caps tight (all stations).

c. Swaybraces properly seated.

4. Launcher electrically connected.

5. LAU-7:

a. Launcher detent wrench safety pin installed.

<b>CAUTION</b>
----------------

Binding of the detent holddown pin indicates an incorrect installation, which could result in the loss of the AIM-9 missile.

b. Launcher detent holddown pin installed.

c. (LAU-7D/A) Ensure midbody umbilical protective cover is installed.

d. (Instrumentation Package) Air data probe/antenna cover installed.

6. LAU-127:

a. Ensure IFL is in LOCKED position.

b. Ensure AIM-9 STRIKER, FWD DETENT, AFT DETENT and AFT DAMPENER are ENGAGED.

c. (AIM-9L/M) Ensure AIM-120 UMBILICAL retracted.

d. (AIM-9X) Ensure AIM-120 umbilical engaged.

e. (AIM-9X) Buffer connector is properly mated to missile (no visible pin surface showing).

7. (AIM-9L/M, Mk 36 Mods 8/9 and Mk 57 Mod 2) Rocket motor igniter mechanism SAFE/ARM T-handle installed and in SAFE position.

8. (AIM-9L/M, Mk 36 Mods 10/11 and Mk 57 Mod 3) Rocket motor igniter mechanism SAFE/ARM selector handle in SAFE position.

9. (AIM-9X) Verify propulsion/steering section igniter mechanism SAFE/ARM selector handle in SAFE position.

10. (AIM-9/CATM-9) Dome protectors installed.

11. (As applicable) Missile umbilical plug connected to launcher receptacle.

12. (If applicable) Missile umbilical block pins secured in launcher umbilical block hooks/umbilical retainer.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

13. (AIM-9L/M/CATM-9L/M) Fin retainers engaged.
14. Missile lug securely held in both directions by launcher detent lugs.
15. (If applicable) Nitrogen receiver/TMU-72B coolant pressure tank properly charged.
16. Ensure aft fairing/nitrogen tank cover assembly secured.
17. (LAU-127) Ensure tank assembly locking mechanism, LOCKED.

<b>CAUTION</b>
----------------

Do not exert excessive force to rock missile. Snubber loosening or damage to wings may occur.

18. (LAU-7) Gently rock aft end of missile to verify snubbers have engaged missile.
19. (AIM-9L/M) Wing surfaces within usable limits.
20. (AIM-9L/M) Rolleron covers removed, assemblies are caged and wheels move freely.
21. (If applicable) Motor aft protective cover removed.
22. (CATM-9/Instrumentation Package) (If applicable) Forward and aft snubber clamp assemblies installed.
23. Suspension hooks are open on unloaded stations.
24. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
25. Tools and handling equipment removed from area.
26. Report status of aircraft to proper authority.

**19-15. PRIOR TO LAUNCH.**

19-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup and in the arming area. Perform prior to launch procedures as follows:

19-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. (If applicable) Secure forward launcher fairing.
3. Secure access doors and panels.
4. (Pods) Remove pod protective cover(s).
5. (Pods) Remove LAU-7 launcher detent wrench safety pins.

**CAUTION**

(AIM-9L/M/CATM-9L/M) Do not remove dome protector until POWER UP BIT is completed.

**NOTE**

If operational conditions require, rearming area procedures may be performed in the arming area.

19-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

1. (Pods) Verify pods are receiving power.

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during arming.

2. Position safety person in view of aircrew.
3. (AIM-9L/M) (If applicable) Notify aircrew of intention to perform missile tone check.

**CAUTION**

If gimbals are uncaged, missile is down.

4. Remove missile dome protector cover.
5. Verify gimbals erect.
6. (AIM-9L/M) (If applicable) Perform missile tone check as follows:
  - a. Turn tester on.
  - b. Verify that bulb is on by looking through peep hole on side of tester.
  - c. Position tester approximately 4 to 6 feet in front of missile dome and slowly move tester across missile field of view until pilot indicates tone is heard.
  - d. Turn tester off when tone checks are completed.

**CAUTION**

Over travel of the Mk 36 Mod 8/9 or Mk 57 Mod 2 rocket motor SAFE/ARM mechanism beyond the armed position will cause damage to the SAFE/ARM locking mechanism.

## AIM-9 Sidewinder Missiles and Instrumentation Packages

**NOTE**

To arm Mk 36 Mod 8/9 or Mk 57 Mod 2 motor, depress T-handle and rotate 90 degrees CCW.

7. (Mk 36 Mod 8/9 or Mk 57 Mod 2 motor) Rotate SAFE/ARM mechanism T-handle to ARM position and remove T-handle.

**NOTE**

To arm Mk 36 Mod 10/11 or Mk 57 Mod 3 motor pull out on handle and rotate 90 degrees CCW.

8. (Mk 36 Mod 10/11 or Mk 57 Mod 3 motor) Rotate SAFE/ARM selector handle to ARM.

**NOTE**

(AIM-9X) To arm the AIM-9X motor rotate SAFE/ARM selector handle to ARM by pulling selector handle and maintaining pull pressure. Rotate 90 degrees counter-clockwise and release pull pressure to lock in ARM position.

9. (AIM-9X) Rotate SAFE/ARM selector handle to ARM.

19-19. **ARMING AREA.** There are no procedures to be performed for pods in the arming area. Perform the following for AIM-9 missiles:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place hands in full view at all times during arming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to arm aircraft.

**WARNING**

Do not remove launcher detent holddown pin. Pin remains installed for flight.

3. (LAU-7) Remove detent wrench safety pin.
4. Indicate to aircrew that aircraft is armed, personnel and equipment are clear.

**19-20. AFTER LANDING OR GROUND ABORT.**

19-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

19-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

19-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for pods in the dearming area before engine shut down. The following must be performed for AIM-9 missiles:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to safe aircraft.
3. (LAU-7) Install detent wrench safety pin in all loaded missile launchers.
4. (LAU-127) Verify IFL, LOCKED.

**CAUTION**

Missile dome protector must be installed prior to engine shutdown.

**NOTE**

Installation of missile dome protector may be accomplished in the dearming or rearming area prior to engine shutdown.

5. Install missile dome protector(s).
6. Indicate to aircrew that aircraft is safe.

19-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

1. (LAU-7) Verify detent wrench safety pin installed in all loaded launchers.
2. Verify ground safety handles in LOCKED position on all loaded stations.
3. (If applicable) Install pod protective cover(s).

## AIM-9 Sidewinder Missiles and Instrumentation Packages

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

4. (If applicable) Place WEAPON LOADED sign in cockpit.
5. Position all armament switches in accordance with Table 5-1.
6. (AIM-9L/M) Verify exhaust ports are clean, notify proper authority if soot is evident.

**CAUTION**

(AIM-9L/M) If the T-handle for the Mk 36 Mod 8/9 or Mk 57 Mod 2 motor SAFE/ARM mechanism is not fully depressed, the locking lever will not be released from the ARM position.

(AIM-9L/M) Do not rotate Mk 36 Mod 8/9 or Mk 57 Mod 2 T-handle beyond the SAFE position.

**NOTE**

(AIM-9L/M) To safe the Mk 36 Mod 8/9 or Mk 57 Mod 2 motor SAFE/ARM mechanism, align the pin in the T-handle with hex fitting on the SAFE/ARM mechanism. Depress the T-handle fully and rotate clockwise to SAFE position (spring tension will assist turning T-handle to SAFE position).

7. (Mk 36 Mod 8/9 or Mk 57 Mod 2 motor) Install T-handle and rotate SAFE/ARM mechanism to SAFE position.

**NOTE**

(AIM-9L/M) To safe Mk 36 Mod 10/11 or Mk 57 Mod 3 motor, pull out on handle and rotate 90 degrees CW.

8. (Mk 36 Mod 10/11 or Mk 57 Mod 3 motor) Rotate SAFE/ARM selector handle to safe.

**CAUTION**

Do not rotate propulsion/steering section SAFE-ARM selector handle beyond the SAFE position or damage to the SAFE-ARM selector handle may result.

9. (AIM-9X) Rotate SAFE-ARM selector handle to SAFE position by pulling SAFE-ARM selector handle and maintaining pull pressure. Rotate handle 90 degrees clockwise and release pull pressure to lock in SAFE position.

10. Report status of aircraft to proper authority.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

19-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure after Landing or Ground Abort procedures have been performed (Paragraph 19-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 19-6).
  - b. Perform Weapon Inspection for missiles/pods to be loaded (Paragraph 19-8).
  - c. Load missile/pods according to Weapon Loading procedures (Paragraph 19-10).
3. For aircraft recovered with loaded stations perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 19-6).

<b>CAUTION</b>
----------------

(AIM-9L/M) Minimal amount of delamination of wing surface is acceptable, provided the delamination is no more than 25% of the wing surface area.

**NOTE**

(AIM-9L/M) If weapon returns with rolleron uncaged, check rolleron for damage per (Paragraph 19-9, Step 1.r).

- b. Perform Weapon Inspection (Paragraph 19-8).
    - (1) Retorque snubber clamps in accordance with (Paragraph 19-12).
4. Perform Postloading Inspection (Paragraph 19-13).
5. Perform Prior to Launch Procedures (Paragraph 19-15).

**19-26. WEAPON UNLOADING.**

19-27. **LAUNCHER PREPARATION.** Prepare launchers for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. (If applicable) Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.



**AIM-9 Sidewinder Missiles and Instrumentation Packages**

7. (AIM-9/CATM) Ensure that dome protector is installed.
8. (If applicable) (PODS) Ensure pod protective cover(s) are installed.
9. (AIM-9L/M) (As applicable) Verify motor SAFE/ARM mechanism or selector in SAFE position and T-handle installed.
10. (AIM-9X) Verify propulsion/steering section SAFE-ARM selector handle is in SAFE position.

**CAUTION**

(AIM-9X) Missile contains electrostatic sensitive devices. Do not touch connector electrical contacts when protective cover/cap is removed. Damage to missile may occur.

11. (If applicable) Open forward fairing and disconnect umbilical connector from launcher receptacle.
12. Install shorting plug and dust cover on umbilical connector.
13. (If applicable) Disconnect launcher umbilical block hooks/umbilical retainer from missile umbilical block.

**CAUTION**

Use only finger pressure to disengage fin retainers, to avoid damage to fin retainer assembly.

14. (AIM-9L/M) Disengage launcher fin retainers from missile fins.
15. (If applicable) (LAU-127) Verify IFL indicates locked.
16. (If applicable) (LAU-127) Retract the AIM-120 UMBILICAL by pressing the DISENGAGE pushbutton; ensure buffer connector is clear of the missile.
17. (LAU-7) Open launcher aft fairing latch.
18. (LAU-7) Remove detent holddown pin.

**CAUTION**

Verify handling equipment is configured to accept missile being unloaded.

19. Position handling equipment near station to be unloaded.

**AIM-9 Sidewinder Missiles and Instrumentation Packages**

19-28. **LAUNCHER UNLOADING.** Unload launchers as follows:

**CAUTION**

(AIM-9/CATM-9) Do not use rollerons, fins, TDD window or dome area for lifting missile.

(AIM-IX) Do not use dome, umbilical cable, wings, TD window, fins, FAU, or JVC for lifting missile.

(Pods) Do not use air data probe/antennas for lifting pods.

**NOTE**

Route umbilical clear of launcher during unloading.

1. LAU-7:

- a. (If applicable) Remove snubber clamp assemblies.
- b. Support missile/pod; rotate launcher detent wrench safety pin to raise detent.
- c. Slide missile/pod aft until missile hanger is clear of detent.
- d. Release detent wrench safety pin.
- e. Continue sliding missile/pod aft until missile/pod hangers are aligned with cutouts in launcher and remove from launcher.

2. LAU-127:

- a. Disengage AIM-9 STRIKER.

**NOTE**

If AFT DETENT and FWD DAMPENER are difficult to disengage, FWD DAMPENER RELEASE may be rotated to RESET.

- b. Disengage AFT DETENT.
- c. Disengage AFT DAMPENER.
- d. Ensure AIM-120 UMBILICAL retracted.
- e. Support missile, slide aft on rail until missile hangers are aligned with cutouts in launcher and remove from launcher.

3. Position missile/pod on handling/loading equipment and secure missile/pod to equipment.

## AIM-9 Sidewinder Missiles and Instrumentation Packages

**NOTE**

(AIM-9X) The primary forward umbilical restraining device is the loop integrated with the dome cover lanyard. The optional restraining device is a rubber band.

4. (As applicable) Install missile umbilical retaining band and stow umbilical.
5. (AIM-9L/M) (As applicable) Install rolleron covers.
6. (As applicable) Install forward hanger protective cover.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

**CAUTION**

(AIM-9X) Missile contains electrostatic sensitive devices. Do not touch connector electrical contacts when protective cover is removed. Damage to missile may occur.

7. (AIM-9X) (If applicable) Install mid-body protective cover.
8. (LAU-127) Rotate AIM-120 UMBILICAL TO ENGAGE position.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

9. (LAU-127) Remove buffer connector and install launcher mid-body umbilical dust cover.
10. (LAU-127) Disengage AIM-120 umbilical.
11. (LAU-7) Install launcher detent holddown pin.
12. (LAU-7) Remove launcher detent wrench safety pin.
13. (If applicable) Install cartridge retainers and auxiliary cartridge caps.
14. Set Weapons Insertion Panel for all stations as required (Paragraph 5-21).
15. Secure access fairings, doors, and panels.
16. (If applicable) Remove/stow WEAPON LOADED sign.
17. Remove missile(s)/pod(s) and handling equipment from area.



**SECTION XX**  
**AIM-120 AMRAAM MISSILES**

**20-1. INTRODUCTION.**

20-2. This section contains loading and unloading information for the missiles listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AIM-120  
CATM-120

**20-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

20-4. ASE authorized for loading AIM-120 missiles is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

20-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

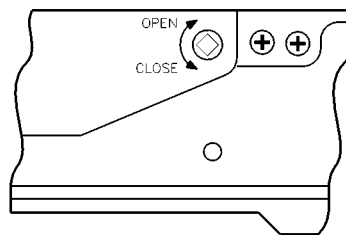
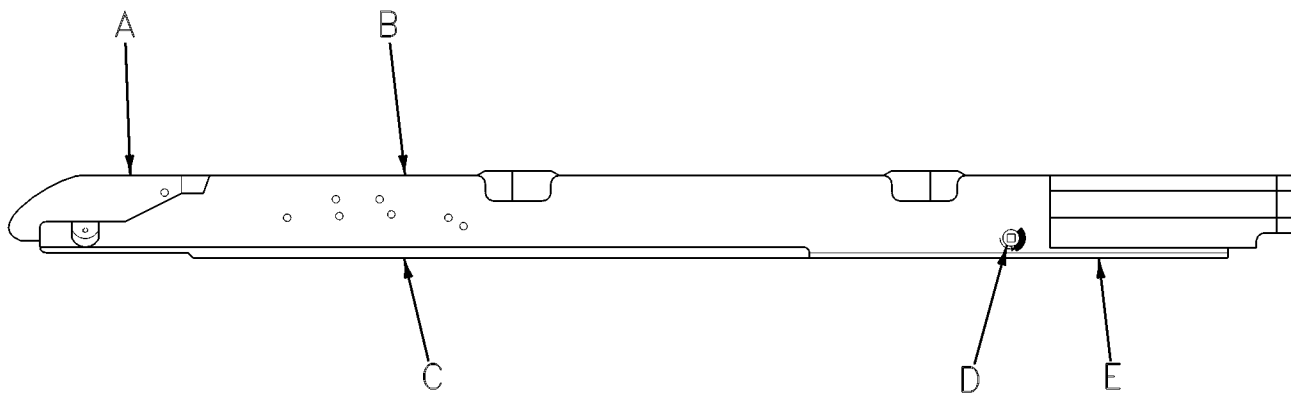
1. Fin Installation/Removal Tool (PN SP548005-103).

**20-6. AIRCRAFT PREPARATION/INSPECTION.**

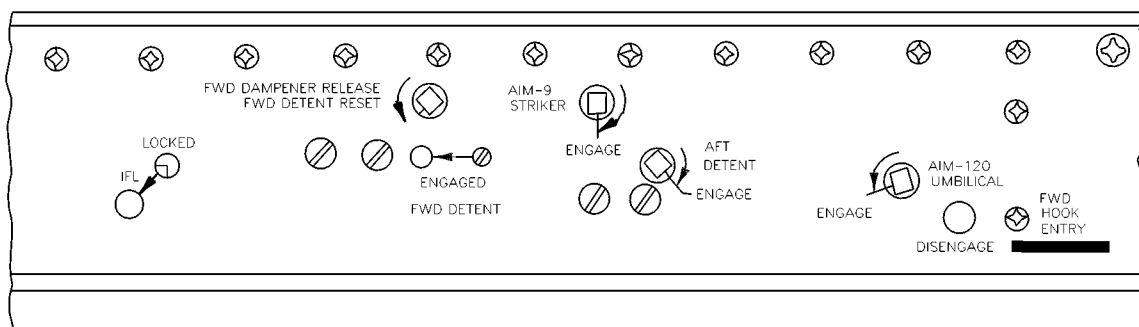
20-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Prepare/inspect launchers for loading as outlined in the following procedures:
  - a. (If applicable) LAU-115 (Previously installed) (Figure 2-16):
    - (1) (If applicable) Verify jettison adapter swaybrace pads and lugs are properly configured for LAU-127 launchers.
    - (2) Verify adapter cable installed (Figure 3-10).
    - (3) (As applicable) LAU-115 access doors and panels secure.
    - (4) Ensure protective cover is installed over AIM-7 umbilical connector.
  - b. (If applicable) Prepare/inspect LAU-127A/A launchers for loading as follows (Figures 2-16 and 20-1).
    - (1) Visually check launcher for damage.
    - (2) Verify forward fairing closed.

**A1-F18AE-LWS-000**  
**AIM-120 AMRAAM Missiles**



A



B

**Figure 20-1. LAU-127A/A Launcher Inspection (Sheet 1 of 2)**

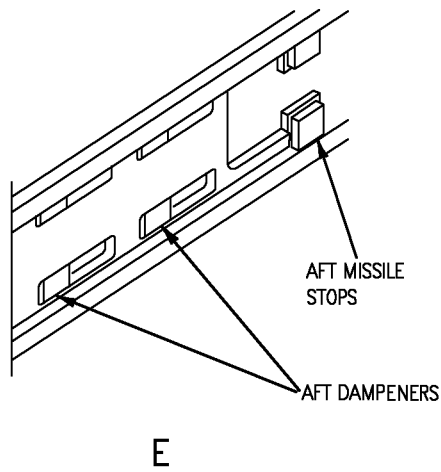
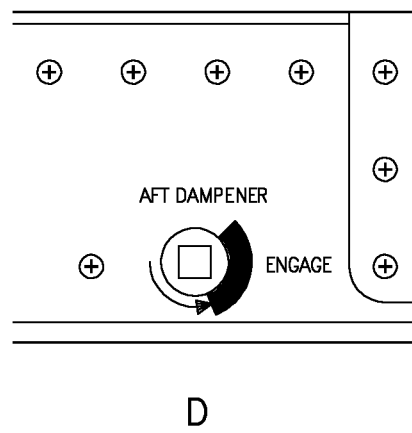
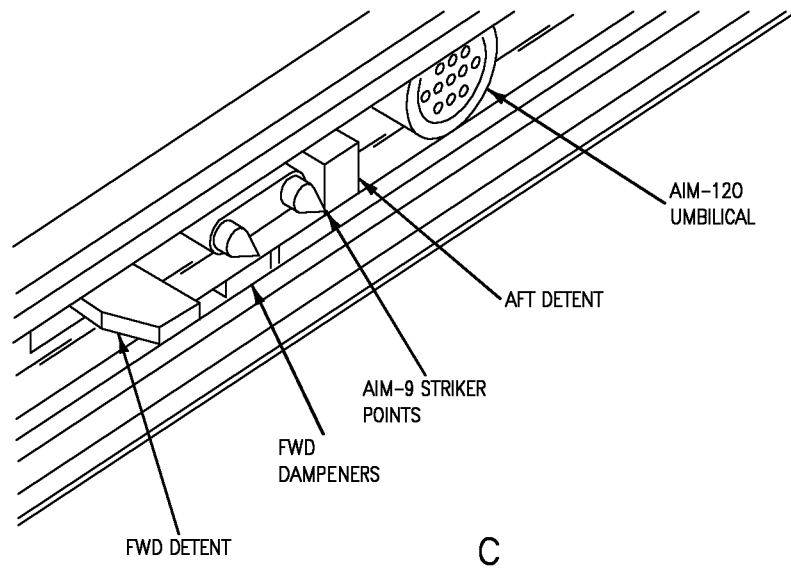


Figure 20-1. LAU-127A/A Launcher Inspection (Sheet 2)

**A1-F18AE-LWS-000**  
**AIM-120 AMRAAM Missiles**

- (3) Ensure IFL in LOCKED position.
- (4) (As required) Rotate FWD DETENT to ENGAGED position.
- (5) Ensure AIM-9 STRIKER, AFT DETENT, AFT DAMPENER and aft missile stop are retracted.
- (6) Rotate AIM-120 UMBILICAL to ENGAGE.
- (7) Remove AIM-120 umbilical plug cover and verify launcher umbilical is serviceable.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

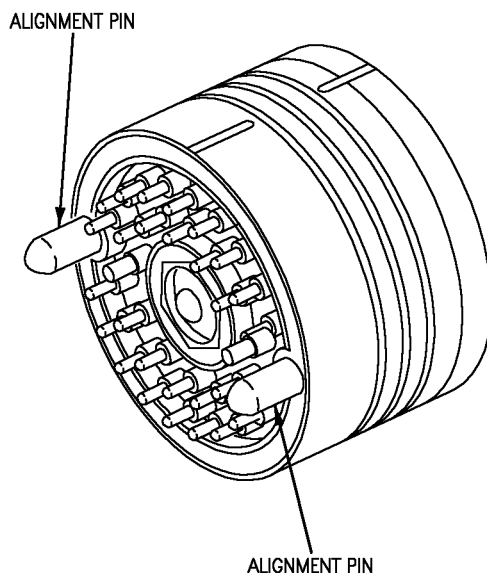
- (8) Inspect buffer connector for serviceability as follows (Figure 20-2):

**NOTE**

Reject buffer connector if pins on missile side are not coated with Braycote-807.

Buffer connector is used for one time firing only.

- (a) Free of corrosion, dirt.



**Figure 20-2. AIM-120 Buffer Connector**



- (b) Pins not missing, bent or broken.
- (c) Pins on missile side are coated with Braycote-807 lubricant.
- (9) Align AMRAAM buffer connector alignment pins with umbilical plug and install buffer connector.
- (10) Retract AIM-120 umbilical by pressing DISENGAGE button.
- (11) Remove nitrogen tank cover assembly.

**NOTE**

Nitrogen tank/internal cap will be installed at all times to prevent contamination of the launcher coolant system.

- (12) Verify nitrogen receiver/internal cap installed.
- (13) Secure nitrogen tank cover assembly.
- c. (If applicable) LAU-116A/A (Figure 20-3):
  - (1) Visually check launcher for damage.
  - (2) Ensure ejector pistons are not damaged and properly lubricated.
  - (3) Open launcher door 508L/R.

**CAUTION**

Substeps (4) and (5) must be performed separately and in sequence to prevent a false locked indication and possible loss of missile or damage to launcher.

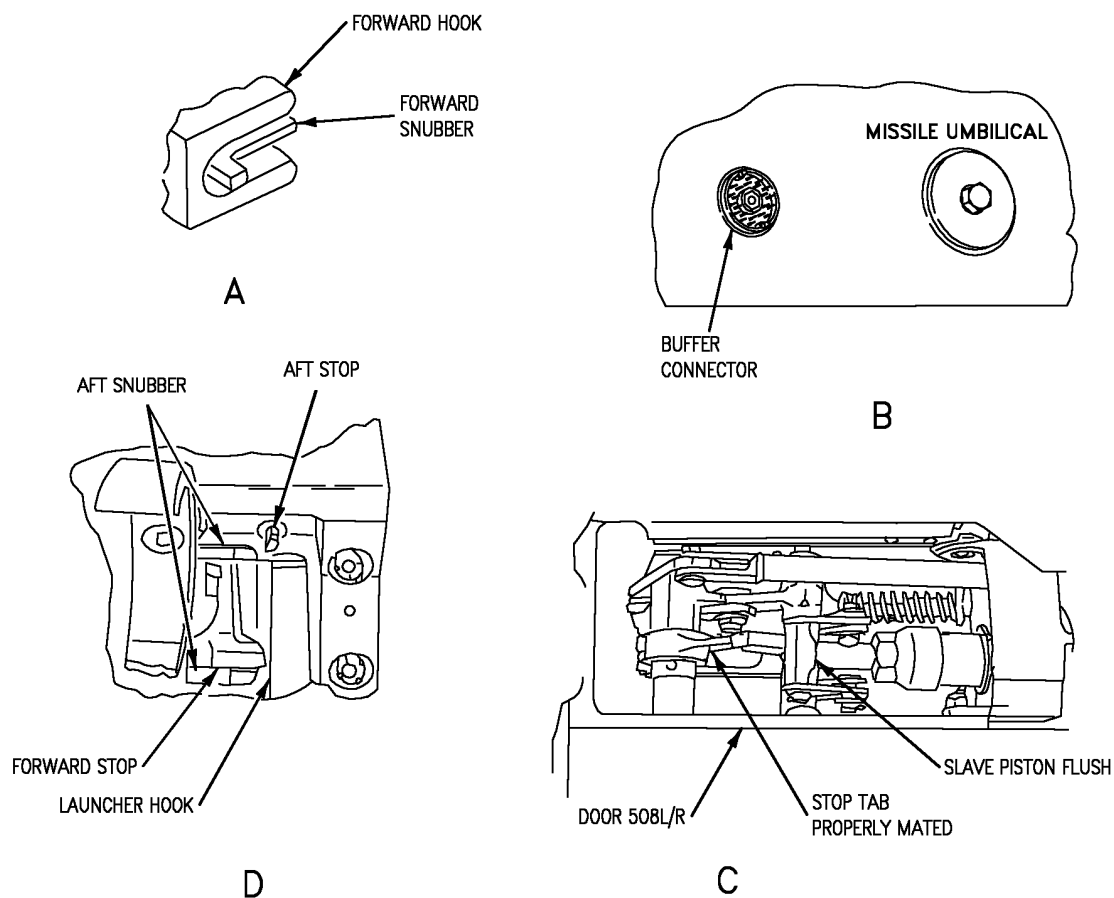
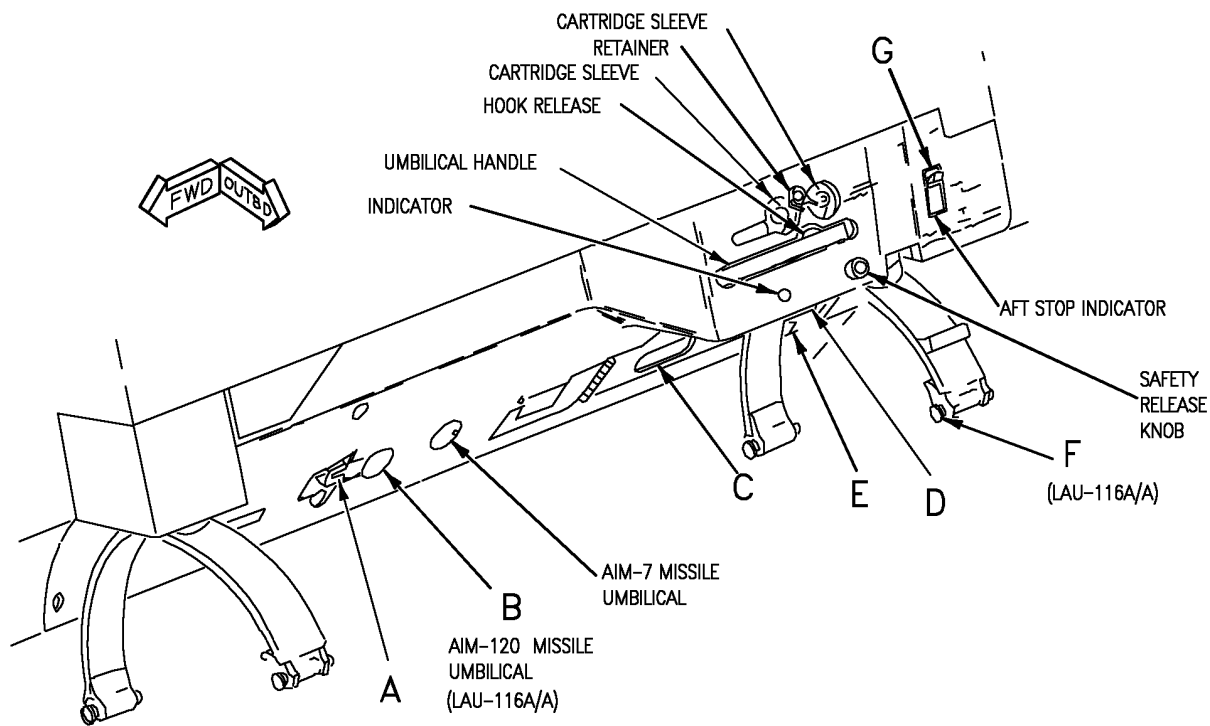
- (4) (If applicable) Insert wrench into HOOK RELEASE socket and turn to the LATCH (full stop) position.

**NOTE**

During night operations, the indicator will be solid for SAFE and striped for unsafe.

- (5) (If applicable) Insert wrench into SAFETY RELEASE and turn clockwise to the SAFE position. Indicator will show GREEN (solid).
- (6) Visually inspect that slave piston is flush with rod end and bellcrank stop tab is properly mated to drive bellcrank.
- (7) Close launcher door 508L/R.

**A1-F18AE-LWS-000**  
**AIM-120 AMRAAM Missiles**



**Figure 20-3. LAU-116A/A Launcher Inspection (Sheet 1 of 2)**

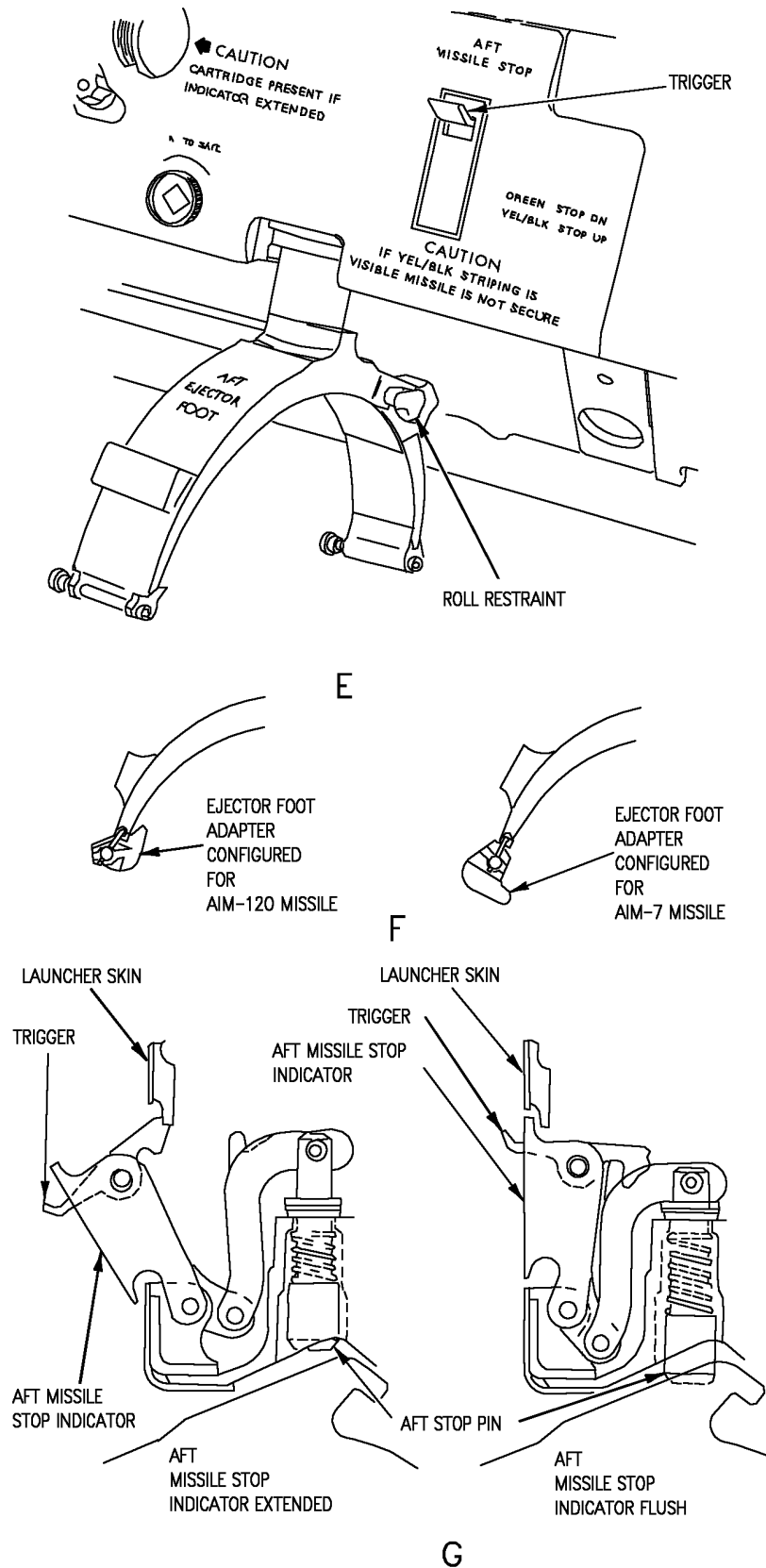


Figure 20-3. LAU-116A/A Launcher Inspection (Sheet 2)

**A1-F18AE-LWS-000**  
**AIM-120 AMRAAM Missiles**

(8) Check forward and aft snubbers for operation by pushing snubbers forward and releasing. Snubbers will return to original position when released.

(9) Retract missile stop indicator as follows:

(a) Disengage trigger on aft missile stop indicator.

(b) Push aft missile stop pin up into launcher until aft missile stop indicator begins to protrude from launcher skin.

**CAUTION**

Do not use trigger to pull aft missile stop indicator the remaining way out.

(c) Grasp indicator body and pull outboard and lock trigger. Aft missile stop pin is up and indicator shows YEL/BLK striping.

(10) Ensure roll restraint on aft foot is on inboard and aft side and ejector feet are aligned.

(11) Remove AIM-120 umbilical plug cover and verify launcher umbilical is serviceable.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

(12) Inspect buffer connector for serviceability as follows (Figure 20-2):

**NOTE**

Reject buffer connector if pins on missile side are not coated with Braycote-807.

Buffer connector is used for one time firing only.

(a) Free of corrosion, dirt.

(b) Pins not loose, missing, bent or broken.

(c) Pins on missile side are coated with Braycote-807 lubricant.

(13) Align AMRAAM buffer connector alignment pins with umbilical plug and install serviceable buffer connector.

(14) Retract umbilical by opening umbilical handle.

(15) Ensure protective cover is installed over AIM-7 missile umbilical.

(16) Rotate launcher ejector foot adapters to AIM-120 position.

## **20-8. WEAPON INSPECTION.**

20-9. Reject missile and notify proper authority if inspection reveals missile is not acceptable for loading. Inspect missiles for loading as follows (Figures 20-4 thru 20-6):

### **WARNING**

If rocket motor Arm Fire Device (AFD) indicates A on red background, launch sequence has been initiated and the missile is to be considered armed. Notify proper authority.

### **NOTE**

CATM-120 is inert. No AFD is present. For training purposes, AFD indications are represented by a painted symbol.

1. Verify AFD indicates white S on green background.

### **WARNING**

A thermally initiated venting system (TIVS) is built into the missile harness cover. Do not expose to heat; auto ignition will occur if missile is exposed to 350°F for 8 hours or 550°F for 30 seconds.

If TIVS is in DISABLE, reject missile for loading and notify proper authority.

### **NOTE**

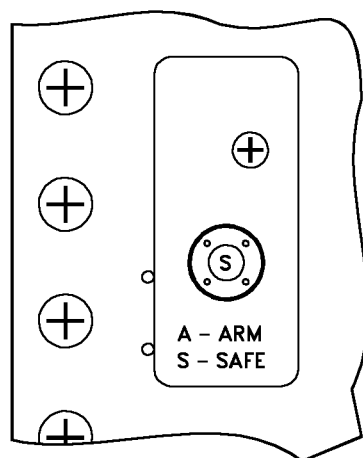
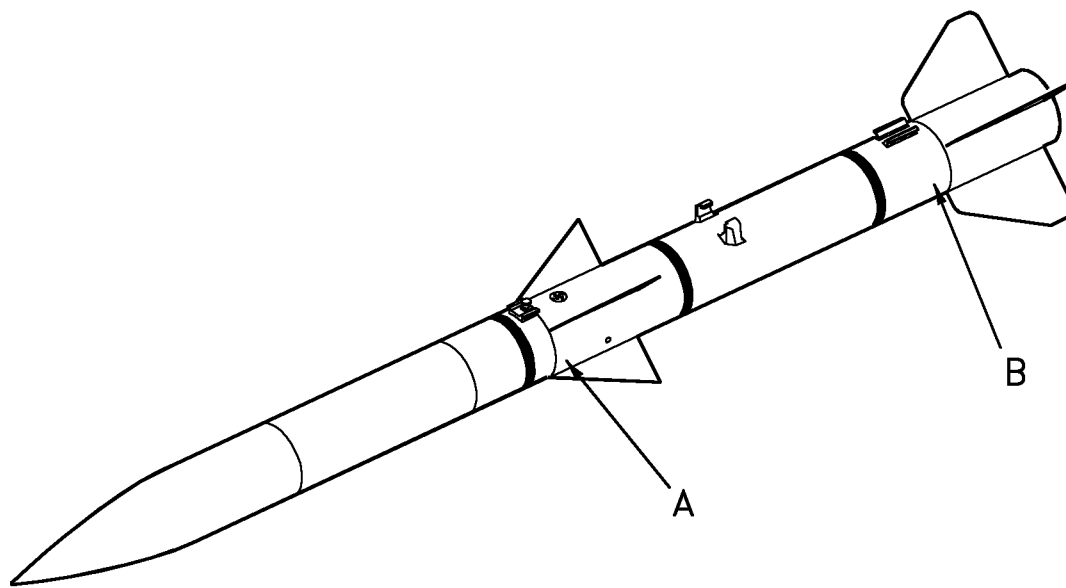
CATM-120 is inert. No TIVS is present. For training purposes, TIVS indications are represented by a painted symbol.

2. Verify thermally initiated venting system (TIVS), indicates ENABLE.

### **CAUTION**

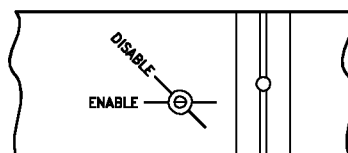
If radome or radome metal tip is damaged, reject missile for loading and notify proper authority.

3. Inspect missile radome for damage.
4. Inspect missile sections for dents, cracks, proper mating and security of assembly. Ensure that no movement exists between sections.
5. Inspect forward, center and aft missile launch hooks for alignment and security.



ARM/FIRE DEVICE

A



THERMAL INITIATED VENTING SYSTEM (TIVS)

B

Figure 20-4. AIM-120 Inspection

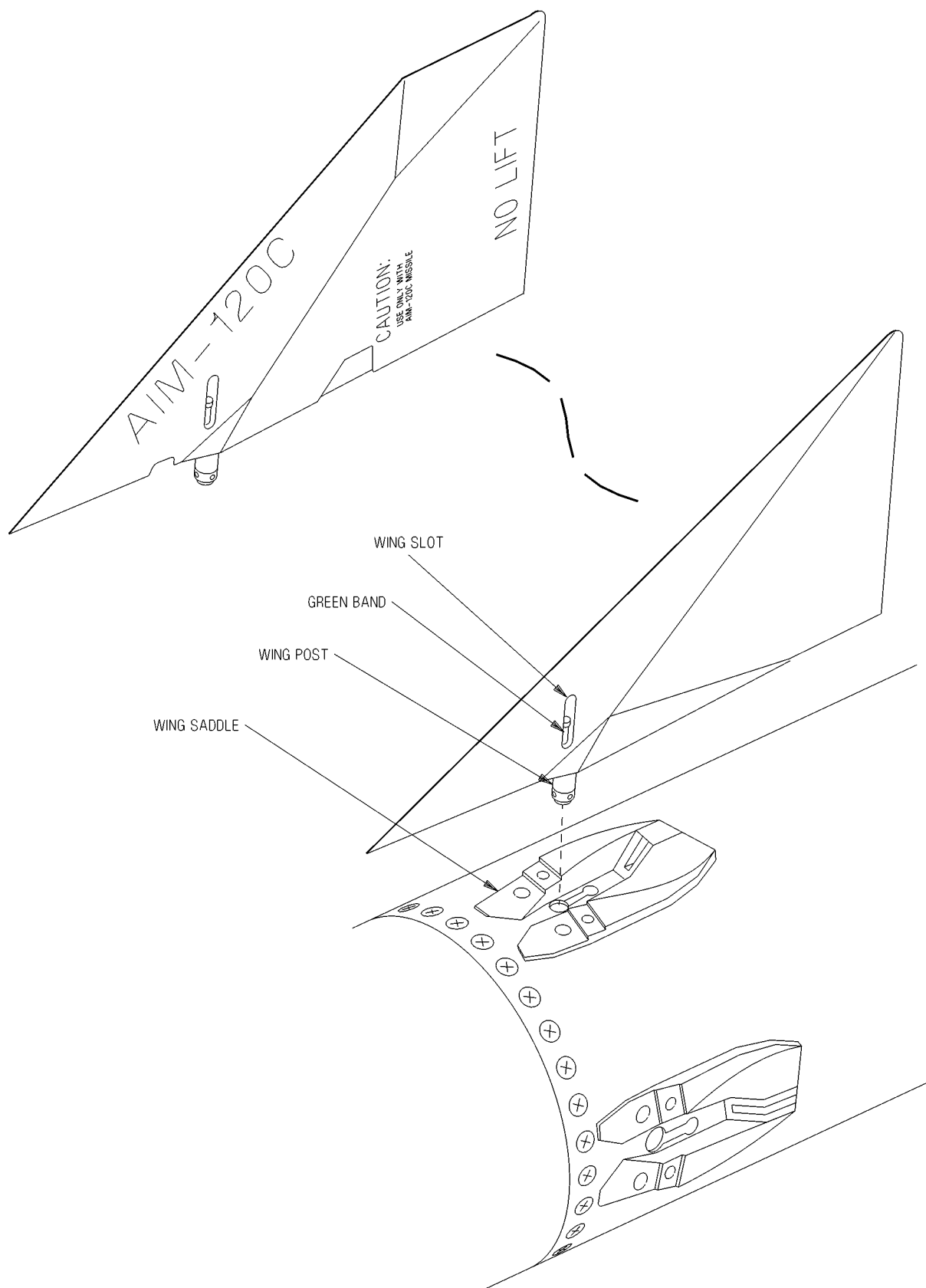


Figure 20-5. AIM-120 Wing Inspection

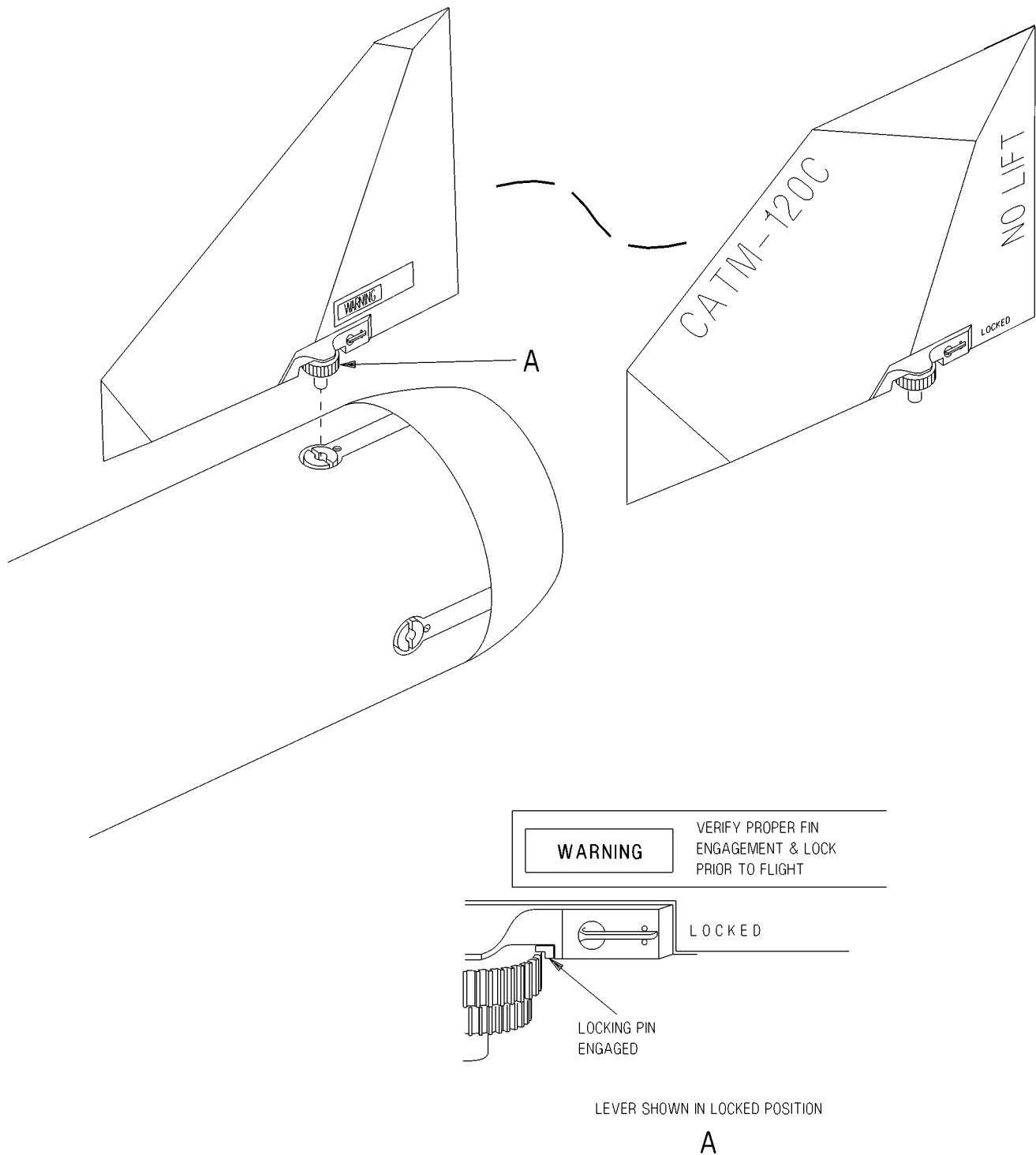


Figure 20-6. AIM-120 Fin Inspection



**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

**CAUTION**

Do not touch missile umbilical receptacle after dust cover has been removed.

6. Remove dust cover and inspect missile umbilical receptacle for damage.

**NOTE**

If missile umbilical is not coated with Braycote-807, reject missile for loading and notify proper authority.

7. Ensure missile umbilical pins are coated with Braycote-807 lubricant.

**CAUTION**

AIM-120C wings are marked USE ONLY WITH AIM-120C MISSILE. AIM-120C wings are not interchangeable with AIM-120A or AIM-120B missiles.

CATM-120C fins are marked USE ONLY WITH CATM-120C MISSILE and are not interchangeable with CATM-120A missiles.

8. Inspect wings and fins for dents, cracks, distortion and corrosion.

**CAUTION**

If any wires are visible in wing shaft holes, reject missile for loading and notify proper authority.

9. Ensure wing shaft holes are clear and fin mounts not damaged.
10. Inspect rocket motor exhaust plug. If missing, loose, or damaged reject missile.
11. (If installed) Remove missile protective end cover, inspect data link antenna cover for punctures, tears, cracks in radome or exposed metal. Reinstall missile protective end cap.

**20-10. WEAPON LOADING.**

20-11. **LAUNCHER PREPARATION.** Prepare launchers for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 20-6) and Weapon Inspection (Paragraph 20-8) have been completed.

**AIM-120 AMRAAM Missiles**

2. Verify that aircraft is grounded.
3. (If applicable) Verify that power is removed from aircraft.
4. Position all armament switches in accordance with Table 5-1.
5. (If applicable) Remove missile protective end cap.
6. (If applicable) LAU-115:
  - a. Verify launcher is electrically connected.
  - b. Verify launcher and adapter are properly configured and secure.
7. (If applicable) LAU-127/A/A:
  - a. Verify IFL in LOCKED position.
  - b. Verify FWD DETENT in ENGAGED position.
  - c. Verify AIM-9 STRIKER, AFT DETENT and AFT DAMPENER are retracted.
  - d. Verify serviceable AMRAAM buffer connector installed.
  - e. Verify AIM-120 UMBILICAL retracted.
8. (If applicable) LAU-116A/A:
  - a. Verify SAFETY RELEASE INDICATOR in GREEN-SAFE position.
  - b. Verify AFT MISSILE STOP indicator extended from launcher skin (YEL/BLK striping visible), trigger locked and missile stop pin up.
  - c. Verify serviceable AMRAAM buffer connector installed.
  - d. Verify umbilical retracted.
9. Manual loading:
  - a. Position handling equipment and weapon under station to be loaded and secure.
10. Remove weapon tiedown straps securing missile to handling/loading equipment.
11. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

20-12. **LAUNCHER LOADING.** Load missiles as follows:

1. (If applicable) LAU-127A/A.

**CAUTION**

Observe NO LIFT areas on missile.

- a. Raise missile until missile hooks enter loading slots in launcher rail.
- b. Slide missile forward until missile hook contacts forward launcher detent.

**NOTE**

Forward snubbers engage automatically when AFT DETENT is engaged.

- c. Maintain forward pressure on missile and rotate AFT DETENT to ENGAGE.
- d. While gently shaking missile, rotate AFT DAMPENER to ENGAGE, ensure missile secure.

**CAUTION**

Buffer connector must be aligned with missile umbilical receptacle to prevent damage to pins.

- e. Rotate AIM-120 UMBILICAL to ENGAGE position.
- f. Install missile wings as follows (Figure 20-5).

**CAUTION**

AIM-120C wings are marked USE ONLY WITH AIM-120C MISSILE. AIM-120C wings are not interchangeable with AIM-120A or AIM-120B missiles.

- (1) Depress pin in wing slot and push wing post into missile until seated, release wing slot pin.
  - (2) Verify wing is secure by pulling outward; green indicator visible in wing slot.
- g. Install missile fins as follows (Figure 20-6):

**CAUTION**

AIM-120C fins are marked USE ONLY WITH AIM-120C MISSILE. AIM-120C fins are not interchangeable with AIM-120A or AIM-120B missiles.

CATM-120C fins are marked USE ONLY WITH CATM-120C MISSILE and are not interchangeable with CATM-120B missiles.

- (1) Unlock fin locking release lever.
- (2) Align and install fin in fin mount.

**CAUTION**

Rotating engagement nut counterclockwise with lock release lever in LOCKED position will damage locking pin.

- (3) Press in on fin and shake fin side to side while rotating engagement nut finger tight.
  - (4) Using tool (PN SP548005-103), rotate engagement nut 1/4 to 1/2 turn to fully engage pin.
  - (5) Rotate fin lock release lever to LOCKED.
  - (6) Verify locking pin is engaged into engagement nut slot.
2. (If applicable) LAU-116A/A:

**CAUTION**

Observe NO LIFT areas on missile.

- a. Raise missile and stabilize on main landing gear.

**CAUTION**

When loading fuselage stations, the missile must be moved forward to clear the main landing gear door.

**NOTE**

Prior to raising missile into position, rotate missile so that umbilical and launch hooks are at 45 degrees inboard.

- b. Position missile so that missile umbilical and hooks align with launcher cavities.

**CAUTION**

Ensure buffer connector is not damaged while loading missile.

- c. Raise missile until launch hooks bottom out in launcher cavities and position to slide onto launcher hooks.

**CAUTION**

AFT MISSILE STOP indicator must be flush with launcher skin and trigger locked or missile loss will occur.

- d. Slide missile forward onto prelocked launcher hooks until the inboard missile hook bears against forward launcher stop and AFT MISSILE STOP indicator returns flush with launcher skin.

**NOTE**

To verify the trigger is locked, grasp trigger and pull outboard. AFT MISSILE STOP indicator should remain flush with launcher skin.

- e. Verify AFT MISSILE STOP indicator is flush with launcher skin and trigger locked.
- f. Ensure missile hooks are engaged and forward and aft snubbers are pressing against missile launch hooks.
- g. Ensure SAFETY INDICATOR shows GREEN.
- h. Gently shake missile to seat snubbers and ensure missile is supported by suspension hooks.
- i. Ensure there is no roll or pitch motion.

**CAUTION**

Buffer connector must be aligned with missile umbilical receptacle to prevent damage to pins.

- j. Engage umbilical into missile by closing UMBILICAL HANDLE.
- k. Install missile wings as follows (Figure 20-5).

**CAUTION**

AIM-120C wings are marked USE ONLY WITH AIM-120C MISSILE. AIM-120C wings are not interchangeable with AIM-120A or AIM-120B missiles.

- (1) Depress pin in wing slot and push wing post into missile until seated, release wing slot pin.
  - (2) Verify wing is secure by pulling outward; green indicator visible in wing slot.
- l. Install missile fins as follows (Figure 20-6):

**CAUTION**

AIM-120C fins are marked USE ONLY WITH AIM-120C MISSILE. AIM-120C fins are not interchangeable with AIM-120A or AIM-120B missiles.

CATM-120C fins are marked USE ONLY WITH CATM-120C MISSILE and are not interchangeable with CATM-120B missiles.

- (1) Unlock fin lock release lever.
- (2) Align and install fin in fin mount.

**CAUTION**

Rotating engagement nut counterclockwise with lock release lever in LOCKED position will damage locking pin.

- (3) Press in on fin and shake fin side to side while rotating engagement nut finger tight.
  - (4) Using tool (PN SP548005-103), rotate engagement nut 1/4 to 1/2 turn to fully engage pin.
  - (5) Rotate fin lock release lever to LOCKED.
  - (6) Verify locking pin is engaged into engagement nut slot.
3. Perform AMRAAM BIT and AM TEST (data link verification) check on missiles as follows:
- a. Position all armament switches in accordance with Table 5-1.
  - b. Connect electrical power to aircraft.
  - c. (If applicable) Apply cooling.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- d. On the GND PWR control panel, position EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds.
- e. Position left and right DDI power switches to DAY (allow warm-up time).
- f. On the left DDI, press and release MENU pushbutton until BIT pushbutton option is displayed.
- g. On the left DDI, press and release BIT pushbutton.
- h. On the right DDI, press and release MENU pushbutton until STORES pushbutton option is displayed.

**NOTE**

On F/A-18C and F/A-18D 163427 thru 165206 with OFP 13C and UP; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, loading CATM-120 with OFP 13C and AYQ-9, no store code can be inserted at Stations 4 and 6 and a load advisory will be displayed upon POWER UP BIT.

- i. On F/A-18C and F/A-18D 163427 thru 165206 with OFP 13C and UP; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, with AYQ-9 SMP only, with CATM-120 loaded on

station 4 or 6, select stores DATA sub-level display on the right DDI and press and release pushbutton 4 or 5 to successfully inventory CATM-120 and clear load advisory.

- j. (F/A-18A+/C/D) On SNSR control panel, place INS switch to NAV.
- k. On the right DDI, press and release STORES pushbutton.
- l. Verify AM or CM displayed at each loaded station, when initial SMS and AIM-120 BIT complete.

**NOTE**

SMS BIT must be complete and PBIT GO displayed, prior to positioning radar switch to OPR.

- m. On sensor control panel, position RADAR switch to OPR (allow three minutes warm up time).

**NOTE**

The initial AM TEST (data link check), is automatically performed upon completion of the radar Operational Readiness Test (ORT).

- n. After radar ORT is complete, AM is boxed and TEST is displayed for each AIM-120, as data link verification is performed.

**NOTE**

The AM TEST option will be boxed until test complete.

- o. Box, TEST and AM TEST option are removed from wing form display after test complete.

**NOTE**

AM TEST option (unboxed) will be displayed approximately 100 seconds after AMRAAM data link is verified.

(As required) The AM TEST pushbutton option will be used to retest AMRAAM data link capability.

- p. Position left and right DDI power switches to OFF.
- q. Position RADAR switch to OFF.
- r. Position INS switch to OFF.
- s. Position EXT PWR switch to OFF.
- t. Remove electrical power from aircraft.
- u. (If applicable) Remove cooling air from aircraft.

**AIM-120 AMRAAM Missiles**

4. Install cartridges in all loaded stations and tighten cartridge retainers and (as applicable) auxiliary cartridge caps (Paragraph 5-24).
5. Place WEAPON LOADED sign in cockpit.
6. Remove tools and handling/loading equipment from area.

**20-13. POSTLOADING INSPECTION.**

20-14. Perform Postloading Inspection for missiles loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Cartridges installed in all loaded stations, cartridge retainers and auxiliary cartridge caps tight (all stations).
5. Suspension hooks open on unloaded stations.
6. (If applicable) LAU-115C/A:
  - a. Jettison adapter lugs and swaybrace pads properly configured for LAU-127A/A with AIM-120 missile (Figure 2-16).
7. (If applicable) LAU-127A/A:
  - a. Ensure forward fairing closed.
  - b. Ensure IFL is in LOCKED position.
  - c. Ensure AIM-9 STRIKER disengaged.
  - d. Ensure FWD DETENT, AFT DETENT and AFT DAMPENERS are ENGAGED.
  - e. Ensure AIM-120 umbilical ENGAGED.
  - f. Ensure nitrogen tank cover assembly installed.
  - g. Ensure tank assembly locking mechanism, LOCKED.
8. (If applicable) LAU-116A/A:
  - a. SAFETY INDICATOR shows GREEN-SAFE.



**NOTE**

To verify the trigger is detented, grasp trigger and pull outboard, AFT MISSILE STOP indicator should remain flush with launcher skin.

- b. AFT MISSILE STOP indicator flush with launcher skin, trigger detented and aft stop pin in the full down position.
  - c. Missile launch lug is engaged and forward and aft snubbers are pressing against missile launch lug and missile hooks.
  - d. Ensure there is no roll or pitch motion.
9. Buffer connector is properly mated to missile (no visible pin surface showing).

**WARNING**

If rocket motor arm/fire device (AFD) indicates A on red background, launch sequence has been initiated and the missile is to be considered ARMED. Notify proper authority.

**NOTE**

CATM-120 is inert. No AFD is present. For training purposes, AFD indications are represented by a painted symbol.

10. Verify rocket motor arm/fire device (AFD) indicates white S on green background.

**NOTE**

CATM-120 is inert. No TIVS is present. For training purposes, TIVS ENABLE is represented by a painted symbol.

11. Verify thermally initiated venting system (TIVS), indicates ENABLE.

**CAUTION**

To verify fins are secure, grasp fin and check for play. Any looseness that cannot be corrected thru repeating fin installation procedures (Paragraph 20-12) is cause for rejecting fin.

12. Wings and fins secure.
13. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
14. Tools and handling/loading equipment removed from area.
15. Report status of aircraft to proper authority.

**20-15. PRIOR TO LAUNCH.**

20-16. Prior to Launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform Prior to Launch procedures as follows:

20-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

**NOTE**

If operational conditions require, rearming area procedures may be performed in the arming area.

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

20-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for AIM-120 missiles in the rearming area after engine turnup.

20-19. **ARMING AREA.** There are no procedures to be performed for AIM-120 missiles in the arming area.

**20-20. AFTER LANDING OR GROUND ABORT.**

20-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

20-22. **SAFING.** After Landing or Ground Abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

20-23 **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to safe aircraft.

**WARNING**

If rocket motor arm/fire device (AFD) indicates A on red background, launch sequence has been initiated and the missile is to be considered ARMED. Notify proper authority.

3. Verify rocket motor arm/fire device (AFD) indicates white S on green background.
4. Indicate to aircrew that aircraft is safe.

20-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose or damaged notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

A thermally initiated venting system (TIVS) is built into the missile harness cover. Do not expose to heat; auto ignition will occur if missile is exposed to 350°F for 8 hours or 550°F for 30 seconds.

1. Verify thermally initiated venting system (TIVS) indicates ENABLE.

**NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

2. (If applicable) Place WEAPON LOADED sign in cockpit.
3. Position all armament switches in accordance with Table 5-1.
4. Verify ground safety handles in LOCKED position on all loaded stations.
5. (If applicable) (LAU-127A/A) Verify IFL LOCKED.
6. (If applicable) (LAU-116A/A) Verify launcher INDICATORS are in the GREEN-SAFE position.

**WARNING**

If rocket motor arm/fire device (AFD) indicates A on red background, launch sequence has been initiated and the missile is to be considered ARMED. Notify proper authority.

7. Verify rocket motor arm/fire device (AFD) indicates white S on green background.
8. Report status of aircraft to proper authority.

20-25. **TURNAROUND.** Turnaround procedures apply to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort Procedures have been performed (Paragraph 20-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 20-6).

- b. Perform Weapon Inspection for missiles to be loaded (Paragraph 20-8).
  - c. Load missile according to Weapon Loading procedures (Paragraph 20-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 20-6).
  - b. Perform Weapon Inspection (Paragraph 20-8).
4. Perform Postloading Inspection (Paragraph 20-13).
5. Perform Prior to Launch Procedures (Paragraph 20-15).

## **20-26. WEAPON UNLOADING.**

20-27. **LAUNCHER PREPARATION.** Prepare launchers for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. (If applicable) (LAU-116A/A) Verify SAFETY INDICATOR shows GREEN-SAFE.
7. (If applicable) (LAU-116A/A) Retract the umbilical by opening the UMBILICAL HANDLE; ensure that the buffer connector is clear of the missile.
8. (If applicable) (LAU-127) Verify that the IFL indicates LOCKED.
9. (If applicable) (LAU-127) Retract the AIM-120 UMBILICAL by pressing the DISENGAGE pushbutton; ensure that the buffer connector is clear of the missile.
10. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.

### **WARNING**

If rocket motor arm/fire device (AFD) indicates A on red background, launch sequence has been initiated and the missile is to be considered ARMED. Notify proper authority.

11. Verify rocket motor arm/fire device (AFD) indicates white S on green background.
12. Verify thermally initiated venting system (TIVS) indicates ENABLE.

13. Remove wings as follows:
  - a. Depress pin in wing slot and pull outward to detach.
14. Remove fins as follows:
  - a. Unlock fin lock release lever.
  - b. Loosen fin engagement nut and remove fin.

**CAUTION**

Verify handling/loading equipment is configured to accept missile being unloaded.

15. Position handling/loading equipment.

20-28. **LAUNCHER UNLOADING.** Unload missiles from launchers as follows:

1. (If applicable) LAU-127A/A:

**CAUTION**

Observe NO LIFT areas on missile.

**NOTE**

If AFT DETENT and FWD DAMPENER are difficult to disengage, FWD DAMPENER RELEASE may be rotated to RESET.

- a. Disengage AFT DETENT.
- b. Disengage AFT DAMPENER.
- c. Support missile, slide aft on rail until missile hooks align with launcher loading slots and remove from launcher.
- d. Lower missile onto handling/loading equipment and secure with weapon tiedown straps.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

- e. Install missile umbilical dust cover.
- f. Rotate AIM-120 UMBILICAL to ENGAGE position.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

- g. Remove buffer connector and install launcher umbilical dust cover.
  - h. (If available) Install missile protective end cap.
  - i. Disengage AIM-120 UMBILICAL.
2. (If applicable) LAU-116A/A:

**CAUTION**

Observe NO LIFT areas on missile.

- a. While supporting missile, unlock SAFETY RELEASE by turning SAFETY counterclockwise until knob stops (YEL/BLK indication).
- b. Insert wrench into HOOK RELEASE socket and turn to the UNLATCH position.

**CAUTION**

The missile must be moved forward to clear the main landing gear door.

Ensure buffer connector is not damaged while unloading missile.

- c. Move missile forward until clear of main landing gear door.
- d. Lower missile, and if applicable, support on main landing gear.
- e. Continue lowering missile onto handling equipment and secure with weapon tiedown straps.

**WARNING**

Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

- f. Install missile umbilical dust cover.
- g. Lower umbilical by closing UMBILICAL HANDLE.

<b>WARNING</b>
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Braycote-807 may cause skin irritation. Avoid contact with skin and clothing. Wash thoroughly after handling.

- h. Remove buffer connector and install launcher umbilical dust cover.
  - i. (If available) Install missile protective end cap.
  - j. Insert wrench into hook release socket and turn to the latch position.
  - k. Insert wrench into safety release knob and turn clockwise to the SAFE position. Indicator will show GREEN.
- 3. Install cartridge retainers and auxiliary cartridge cap.
  - 4. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
  - 5. Secure access doors and panels.
  - 6. (If applicable) Remove/stow WEAPON LOADED sign.
  - 7. Remove missiles and handling/loading equipment from area.





**SECTION XXI**  
**AGM-65 MAVERICK MISSILES**

**21-1. INTRODUCTION.**

21-2. This section contains loading and unloading information for the missile listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading and the missiles are checked out and fully assembled for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AGM-65E/F

**21-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

21-4. ASE authorized for loading AGM-65 series missiles is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

21-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

1. AN/AWM-54 Aircraft Firing Circuit Test Set or Firing Circuit Test Set AN/AWM-102 with W30 Adapter.

**21-6. AIRCRAFT PREPARATION/INSPECTION.**

21-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

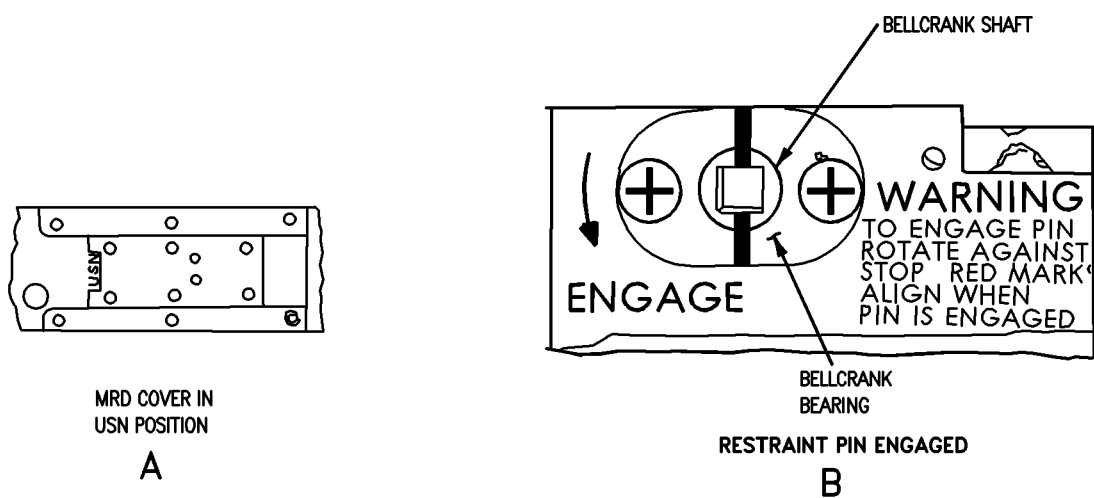
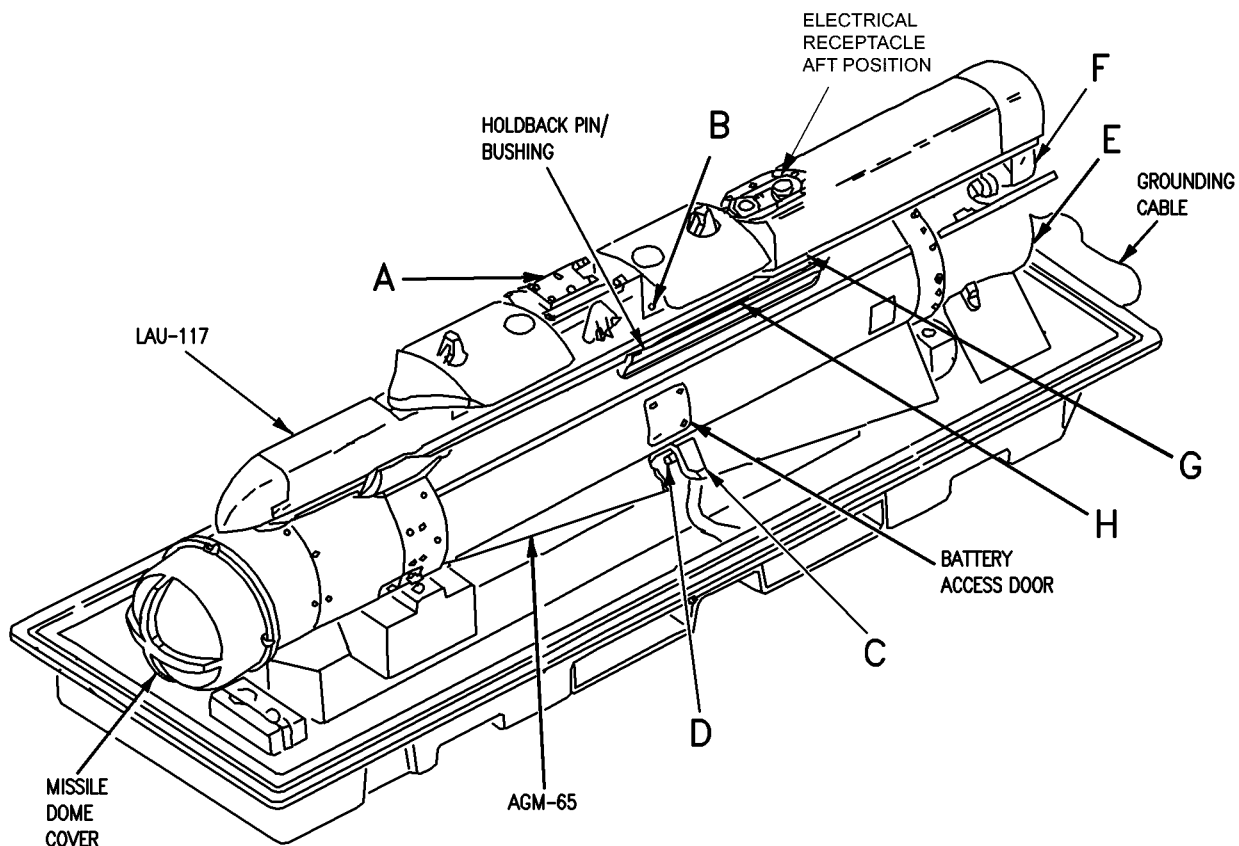
1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. Verify adapter cable installed (Figure 3-11).

**21-8. WEAPON INSPECTION.**

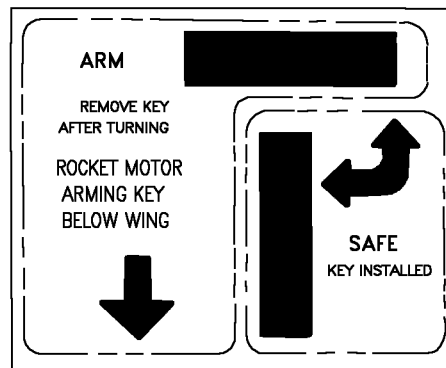
21-9. Reject missile and notify proper authority if inspection reveals missile is not acceptable for loading. Inspect missile for loading as follows (Figure 21-1):

1. Ensure Standard Arming key is in SAFE position on rocket motor.

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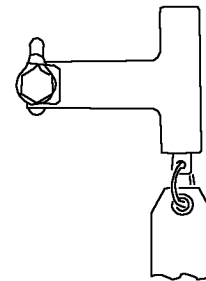


**Figure 21-1. AGM-65 Missile Inspection (Sheet 1 of 3)**



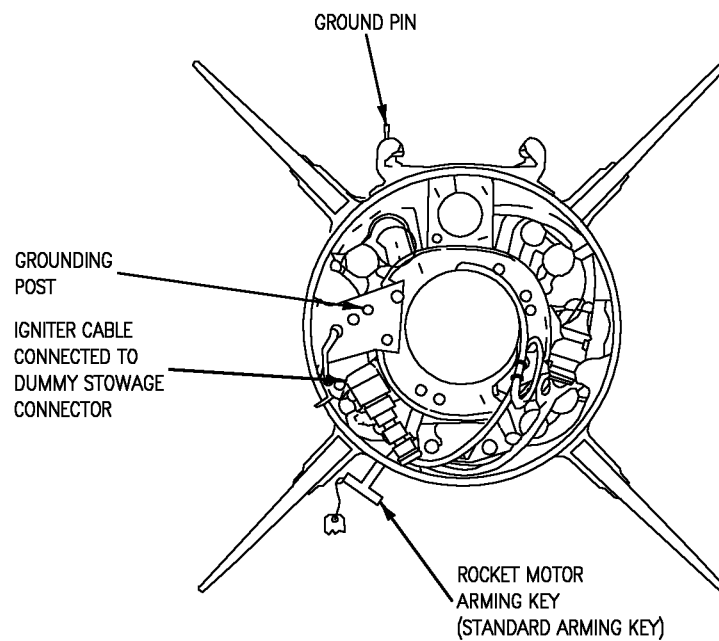
ARMING KEY DECAL

C



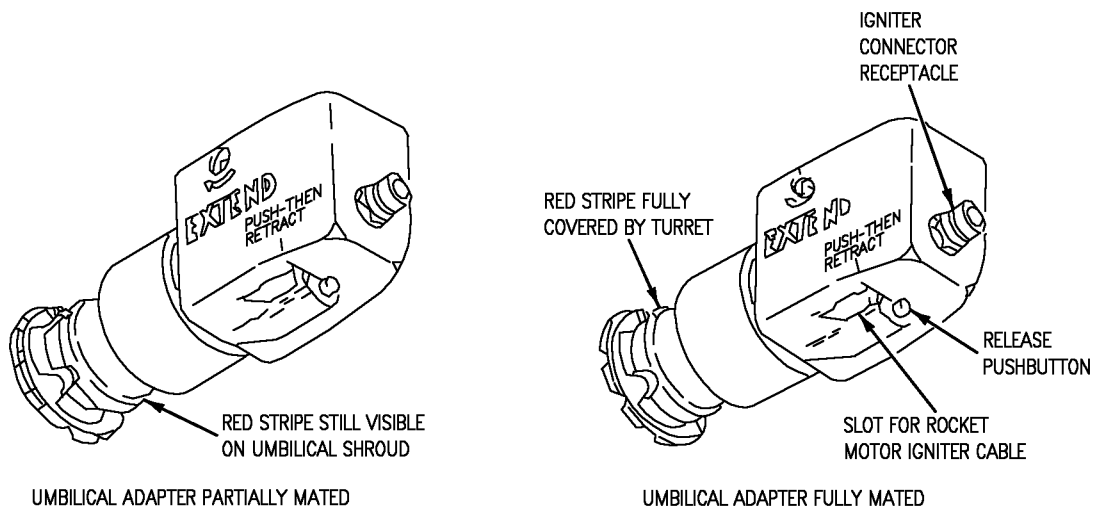
ROCKET MOTOR ARMING KEY  
(STANDARD ARMING KEY)

D



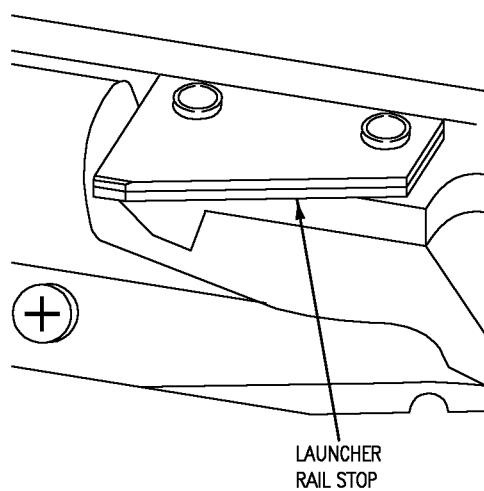
E

Figure 21-1. AGM-65 Missile Inspection (Sheet 2)

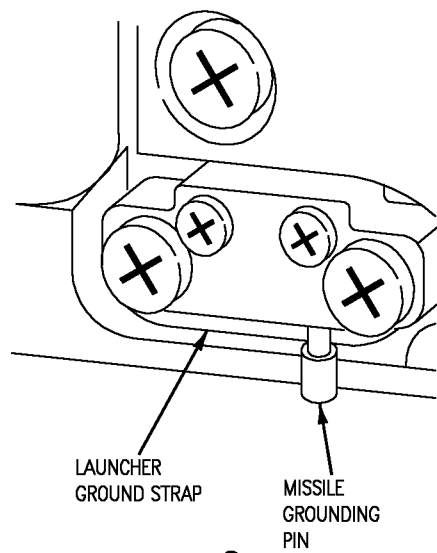


LAUNCHER UMBILICAL CONNECTOR

F



H



G

Figure 21-1. AGM-65 Missile Inspection (Sheet 3)

**WARNING**

Reject missile if motor section is damaged. Erratic missile performance or possible motor detonation will result from propellant deformation.

Warm missile skin opposite the fuselage door indicates a possible activated battery. Do not attempt to open battery access door, load or download missile. Personnel will withdraw at least 15 feet to avoid toxic fumes and cadmium dust. Notify proper authority.

**NOTE**

The following procedures assume that the missile has been assembled and preloaded on accessory suspension equipment (PASE).

2. Inspect missile sections for warm skin, dents, cracks, proper mating, and security of assembly. Ensure that no movement exists between sections.

**NOTE**

Reject missile if wings or fins are damaged.

3. Verify wings and fins not damaged.

**WARNING**

Do not connect rocket motor igniter cable to launcher igniter connector receptacle.

4. Verify rocket motor igniter cable is connected to dummy stowage connector and connector is clean and undamaged.
5. Verify launcher umbilical adapter fully mated to missile umbilical connector. When fully mated, red indicator stripe will be covered by umbilical adapter turret.
6. Verify aft end of missile is free from hydraulic fluid leakage.
7. Verify nozzle closure not damaged.
8. Remove cover; inspect dome for damage and reinstall dome cover.
9. Verify missile grounding pin on left side of aft hook is clean and undamaged and contacts launcher ground strap.

**NOTE**

In fully lowered position, the launcher holdback pin should engage missile holdback pin bushing and red marks on bellcrank shaft and bearing align.

10. Verify launcher holdback pin fully engages missile holdback pin bushing and red marks on launcher bellcrank align.

11. Launcher MRD cover in USN position.

12. Launcher 30-inch suspension lugs installed and correctly aligned.

13. Verify launcher electrical receptacle is in the aft position.

14. Verify pre-loading data marked on launcher.

15. If container base is used to load missile, disconnect grounding cable from grounding post on aft end of missile and replace nut securely.

## **21-10. WEAPON LOADING.**

21-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 21-6) and Weapon Inspection (Paragraph 21-8) have been completed.

2. Verify that aircraft is grounded.

3. Position all armament switches in accordance with Table 5-1.

4. Position PP-6419 power supply 115 VAC circuit breaker switch to ON.

5. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).

6. Position handling/loading equipment with PASE under station to be loaded and secure.

7. (If applicable) Bomb hoist loading (Paragraph 5-33):

a. Install trolleys on launcher.

b. Operate hoist to remove slack from cable.

c. Position one person at nose and one person at tail of PASE to steady PASE while hoisting.

d. Remove weapon tiedown straps securing PASE to handling equipment.

e. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

21-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:

a. Raise PASE until both suspension lugs enter bomb rack suspension hooks and hooks latch.

b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until PASE weight is supported by bomb rack suspension hooks.
  - d. Gently shake PASE to ensure PASE is supported by bomb rack suspension hooks and sway-braces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
  - f. Remove weapon tiedown straps.
2. (If applicable) Bomb hoist loading:
- a. Hoist PASE until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - c. Ease hoist until PASE weight is supported by bomb rack suspension hooks.
  - d. Gently shake PASE to ensure weapon is supported by suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and launcher.

**WARNING**

Do not connect missile (rocket motor) igniter cable connector to launcher until directed.

- 4. Connect adapter cable to launcher electrical connector (Figure 3-11).
- 5. (AGM-65E) Remove missile dome cover.
- 6. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).
- 7. (AGM-65F) Perform test procedures for loaded weapons as follows:
  - a. Position all armament switches in accordance with Table 5-1.
  - b. Verify all loaded stations are safe.
  - c. Connect electrical power to aircraft.
  - d. (If applicable) Apply cooling air.

<b>WARNING</b>
----------------

Prior to applying power, cockpit switches and controls must be ready to receive power.

- e. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds.
- f. Position the left and right DDI power switches to DAY (allow warm-up time).
- g. On F/A-18C and F/A-18D 163427 thru 163782, position the Horizontal Indicator OFF/NIGHT/DAY switch to DAY.
- h. On F/A-18C and F/A-18D 163985 and UP; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, position the Multipurpose Color Display (MPCD), OFF/NGT switch to NGT and the DAY/AUTO switch as applicable (allow for warm-up).
- i. On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.
- j. On the left DDI, press the BIT pushbutton; PBIT GO will be displayed below STORES when BIT is complete.
- k. On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.
- l. On the right DDI, press the STORES pushbutton; weapons display appears with 1 MAVF in wingform for station being checked, SAFE is on.

**NOTE**

Ensure that TGT is not boxed on the HI/MPCD display.

- m. Remove the missile dome cover.
- n. On the master arm control panel, select A/G; A/G light comes on.
- o. On the right DDI, select the MAVF weapon; box appears around selected weapon with an X through it; 3 minute timer display is on and counting down.

<b>CAUTION</b>
----------------

Weapon video displayed on DDI must not exceed 15 minutes or damage to weapon seeker will occur.

If weapon video is not displayed after 15 minutes, power must be removed from the weapon for a 30 minute cool down.



**NOTE**

Ensure that the timer display has been removed prior to continuing test.

p. On the right throttle grip, press and release the CAGE/UNCAGE switch; weapon video is present with UNCAGED displayed in the upper right corner.

q. On the aircraft controller grip, push the sensor control switch to the right; TDC diamond appears in the upper right corner of the display.

**NOTE**

This is a no action slew. If the TDC is pressed, a failure to slew will occur.

r. On the right throttle grip, move the TDC switch to the left, right, up and down; using weapon video, ensure that weapon seeker is slewing as commanded.

s. On the right throttle grip, press and release the CAGE/UNCAGE switch; CAGED appears on the DISPLAY.

**NOTE**

If more than one weapon is to be checked, press the STEP option to select the next weapon in the firing sequence. Repeat steps p through s for each weapon.

t. On the right DDI, deselect the MAVF weapon.

u. On the master arm control panel, deselect A/G; the A/G light goes off.

**NOTE**

Ensure that TGT is not boxed on the HI/MPCD display.

v. On F/A-18C and F/A-18D 163427 thru 163782, position the Horizontal Indicator OFF/NIGHT/DAY switch to OFF; display area off.

w. On F/A-18C and F/A-18D 163985 and UP; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, position the Multipurpose Color Display OFF/NGT switch to OFF; display area off.

x. Position the left and right DDI power switches to OFF; display areas off.

y. On the GND PWR control panel, position the EXT PWR switch to OFF.

z. Install missile dome cover.

**NOTE**

Do not install auxiliary cartridge.

8. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps. Auxiliary cartridge not installed (Paragraph 5-24).

9. Place WEAPON LOADED sign in cockpit.

10. Remove tools and handling/loading equipment from area.

**21-13. POSTLOADING INSPECTION.**

21-14. Perform Postloading Inspection for missiles loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.

2. WEAPON LOADED sign in cockpit.

3. Ground safety handles in LOCKED position on loaded stations.

4. Adapter cable connected and pullout bail attached to bail bar.

5. Standard arming key in SAFE position.

6. Swaybraces properly seated.

7. Cartridges installed in all loaded bomb racks; cartridge retainers and auxiliary cartridge caps tight.

8. Launcher holdback pin fully engages missile restraint pin bushing and red marks on launcher bellcrank align.

9. Umbilical connector mated and no red stripe visible.

10. Rocket motor igniter cable connected to dummy stowage connector.

11. Missile dome cover removed.

12. Suspension hooks open on unloaded stations.

13. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded, and verify all unloaded station codes are set as required (Paragraph 5-21).

14. Tools and handling/loading equipment removed from area.

15. Report status of aircraft to proper authority.

**21-15. PRIOR TO LAUNCH.**

21-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows.

21-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

21-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during stray voltage check.

If stray voltage is detected, do not connect igniter cables. Notify proper authority.

1. position safety person in view of aircrew.
2. Remove rocket motor igniter connector from dummy stowage connector.
3. Notify aircrew of intention to perform stray voltage check.
4. Perform stray voltage check for SQB-1 and SQB-2 at igniter connector receptacle on each loaded station (Paragraph 5-34).

**WARNING**

Do not electrically connect rocket motor igniter connector until directed by safety person.

**CAUTION**

Failure to properly secure the igniter cable in the slot of the umbilical engagement mechanism may result in damage to cable or in-flight disconnect of igniter connector.

Do not use any sharp objects to press igniter cable into slot.

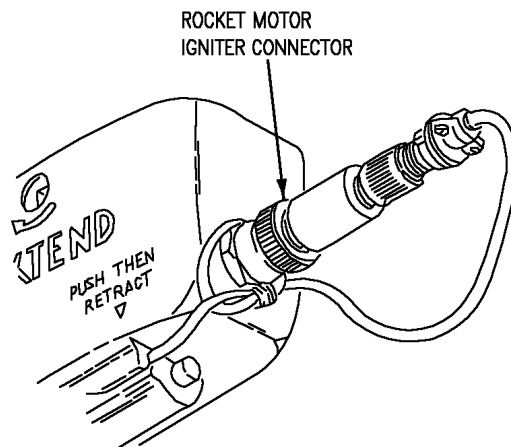
5. Connect rocket motor igniter cable connector to launcher igniter connector receptacle (Figure 21-2).
6. Press missile rocket motor igniter cable into slot in bottom of umbilical engagement mechanism.

21-19. **ARMING AREA.** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during arming.



**Figure 21-2. Igniter Cable Installed**

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to arm aircraft.
3. Arm rocket motor by rotating standard arming key 90° counterclockwise and remove key.
4. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

## **21-20. AFTER LANDING OR GROUND ABORT.**

21-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded missiles as a result of a ground abort.

21-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

21-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

### **WARNING**

If missile launch has been attempted, missile battery may have been activated; notify proper authority. Remain clear of missile/missile battery access door/aircraft for one hour if missile battery has been activated.

If any component is missing, loose or damaged, notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to safe aircraft.
3. Verify ground safety handles in LOCKED position.

**NOTE**

To install standard arming key in rocket motor, align index pin on key with slot in safe arming device.

4. Safe rocket motor by pressing standard key inward and rotate 90° clockwise.
5. Indicate to aircrew that aircraft is safe and personnel and equipment are clear.

21-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. Disconnect rocket motor igniter cable connector(s) from launcher igniter connector receptacle(s) and stow.
5. Install dome cover.
6. Report status of aircraft to proper authority.

21-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 21-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 21-6).

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**AGM-65 Maverick Missiles**

- b. Perform Weapon Inspection for missiles to be loaded (Paragraph 21-8).
  - c. Load PASE according to Weapon Loading procedures (Paragraph 21-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 21-6).
  - b. Perform Weapon Inspection (Paragraph 21-8).
4. Perform Postloading Inspection (Paragraph 21-13).
5. Perform Prior to Launch procedures (Paragraph 21-15).

**21-26. WEAPON UNLOADING.**

21-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify that ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps, and remove cartridges on stations to be unloaded.
7. Standard arming key is in SAFE position on rocket motor.
8. Verify rocket motor igniter cable is disconnected from launcher and connected to dummy stowage connector.
9. Disconnect adapter cable from launcher.

<b>CAUTION</b>
----------------

Verify handling/loading equipment is configured to accept weapon being unloaded.

10. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).

11. Position handling/loading equipment under station to be unloaded and secure.
12. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until PASE is supported.
  - b. Secure PASE to handling/loading equipment with weapon tiedown straps.
13. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install trolleys on launcher.
  - b. Operate hoist until hoist is supporting PASE.
  - c. Position one person at nose and one person at tail of PASE to steady and guide PASE onto handling equipment.

21-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower PASE onto handling equipment.
  - d. Secure PASE to handling equipment with weapon tiedown straps.
3. Remove handling/loading equipment with PASE from under aircraft.
4. Install cartridge retainers and auxiliary cartridge caps.
5. (If applicable) Remove adapter cable.
6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove PASE and handling/loading equipment from area.





**SECTION XXII**  
**AGM-84 SERIES MISSILES**

**22-1. INTRODUCTION.**

22-2. This section contains loading and unloading information for the missile listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AGM-84D (HARPOON)  
AGM-84E (SLAM)  
AGM-84H/K (SLAM ER)

**22-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

22-4. ASE authorized for loading AGM-84 missiles is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

22-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

1. (AGM-84E) Memory Loader MU-956/T.

**22-6. AIRCRAFT PREPARATION/INSPECTION.**

22-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3.

1. Ensure swaybraces are inspected and adjusted to the extended position on stations to be loaded (Paragraph 5-10).

2. Ensure suspension hooks are open on stations to be loaded.

3. Verify adapter cable installed (Figure 3-12).

**22-8. WEAPON INSPECTION.**

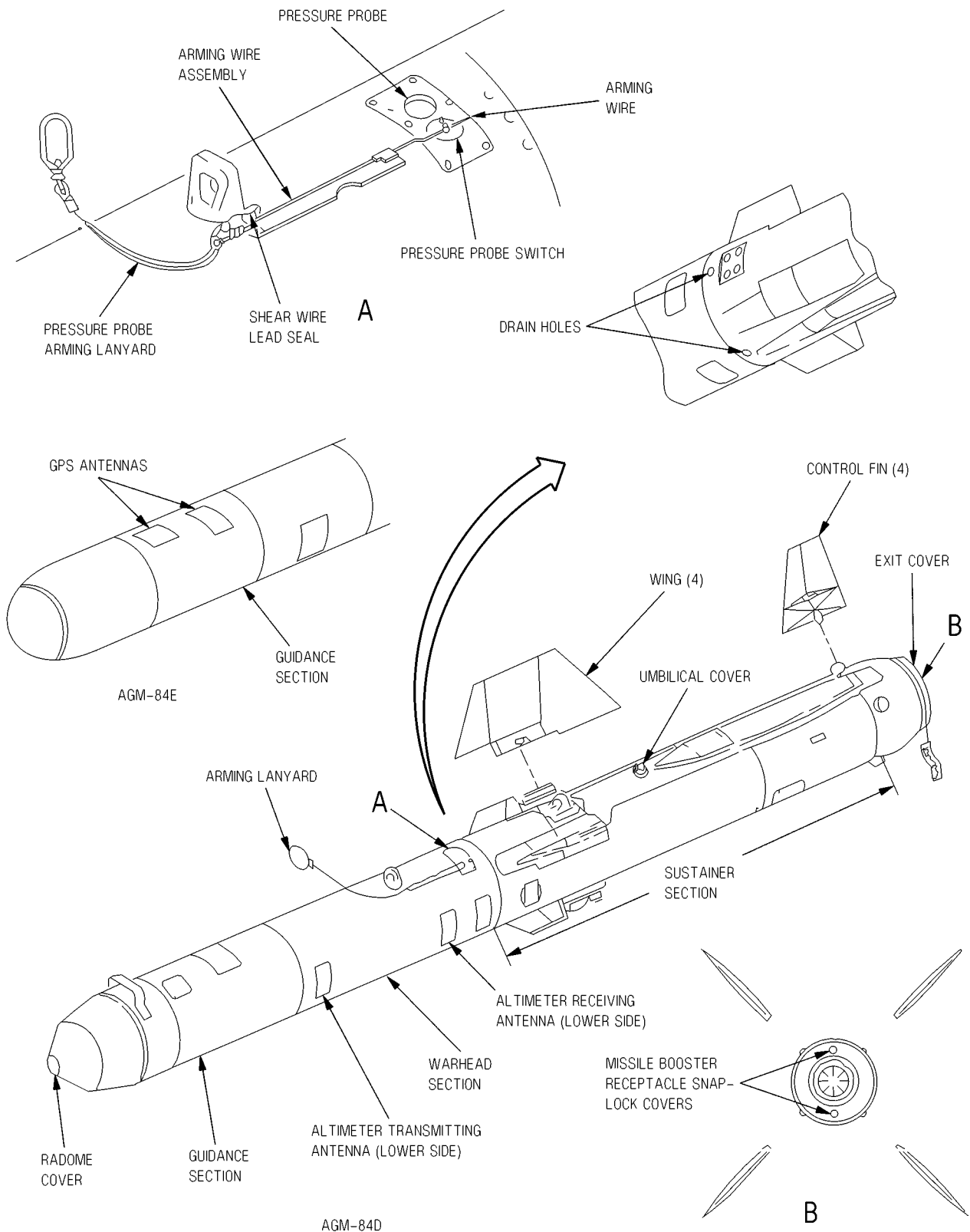
22-9. Reject missile and notify proper authority if inspection reveals missile is not acceptable for loading. Inspect missile for loading as follows (Figure 22-1):

**WARNING**

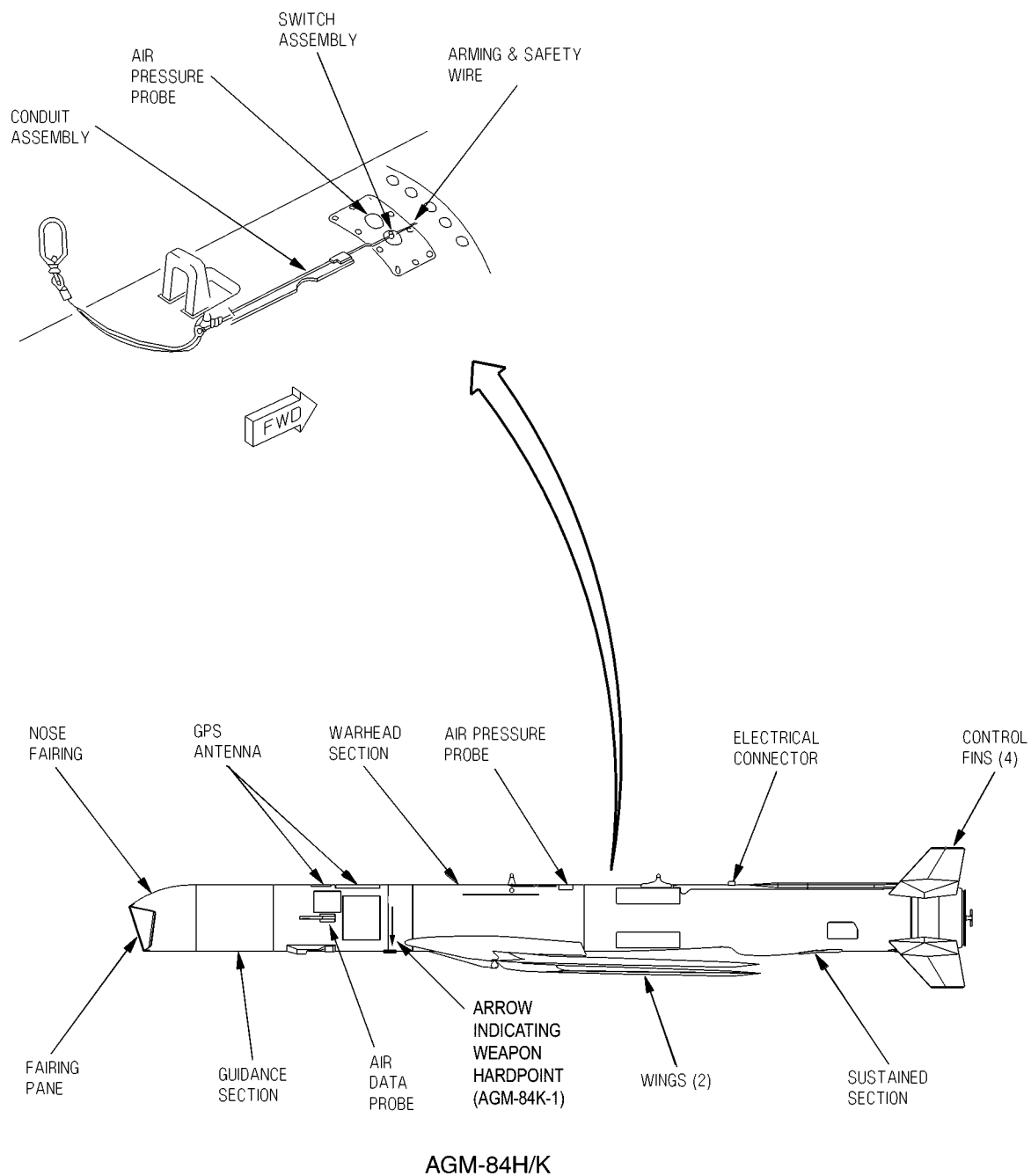
Battery Electrolyte, white residue or clear odorless liquid, is highly caustic and dangerous to skin and eyes. Remain clear and notify proper authority if leakage evident.

1. Ensure that weapon is properly assembled, not damaged and no leakage exists.

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**AGM-84 Series Missiles**



**Figure 22-1. AGM-84 Series Missile Inspection (Sheet 1 of 2)**



**Figure 22-1. AGM-84 Series Missile Inspection (Sheet 2)**

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**AGM-84 Series Missiles**

2. Guidance section:

- a. (If applicable) Remove radome/nose cover.

**CAUTION**

(AGM-84H/K) Do not touch seeker optics glass, air data system probe, or data link antenna during loading operations.

- b. Inspect radome/IR/seeker optics not damaged, scratched, broken, cracked. (If applicable) Reinstall radome/nose cover.

**WARNING**

(AGM-84H/K) If air pressure probe is bent, damaged or otherwise obstructed, notify proper authority.

- c. (AGM-84H/K) Inspect air pressure probe for any obstruction, bend or other damage.
- d. (If applicable) Altimeter antenna is not damaged.
- e. Doors installed and secure.

3. Warhead or exercise section:

**WARNING**

If pressure probe is extended, the missile must be considered armed. Notify proper authority.

- a. Pressure probe arming wire and lanyard installed and lanyard taped to missile. Shear wire and lead seal installed.

**NOTE**

Front suspension lug must be bottomed, then backed out a maximum of one-half turn until properly aligned.

- b. (AGM-84D/E) Inspect front lug for proper installation and alignment.
- c. (AGM-84H/K) Inspect forward folding lug for proper operation.
- d. Antenna(s) not damaged.
- e. Doors installed and secure.
- f. (AGM-84H/K) Inspect wings, clean, and left wing tab not damaged.

4. Sustainer section:

**WARNING**

Battery Electrolyte is a clear, odorless, highly caustic fluid which is dangerous to skin and eyes. Remain clear and notify proper authority.

- a. Ensure there is no electrolyte leakage.

**NOTE**

Fuel leakage may be detected by blue residue (JP-10).

- b. Ensure there is no fuel or fluid leakage.
- c. Inspect rear lug for proper installation.
- d. Remove umbilical connector cover and inspect connector for damage. Reinstall cover.
- e. Doors installed and secure.

5. Control section:

- a. (If applicable) protective caps installed on the control fin actuator shafts (4 places).

**NOTE**

Minor dents in the engine exhaust cone that result from required adjustments are acceptable.

- b. Remove engine exit cover.
- c. (AGM-84H/K) Ensure that the two booster snaps lock covers are firmly in place; data link antenna installed and not damaged.
- d. Inspect engine exit duct for FOD.
- e. Reinstall engine exit cover.

**CAUTION**

Ensure control fins are designated for missile to be loaded.

Exercise care when handling wings and fins.

- 6. Inspect wings and fins for dents, cracks, distortion and corrosion.
- 7. (If applicable) Missile log book available.

## **22-10. WEAPON LOADING.**

22-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 22-6) and Weapon Inspection (Paragraph 22-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install bomb hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).

<b>CAUTION</b>
----------------

Use extreme care to avoid radome or altimeter damage while positioning missile.

5. Position handling/loading equipment with missile under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33).
  - a. (As applicable) Install hoisting band and single store trolleys on weapon.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of missile to steady missile while hoisting.
  - d. Remove weapon tiedown straps securing missile to handling equipment.
7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

22-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise missile until suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

### **NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until missile weight is supported by bomb rack suspension hooks.
- d. Gently shake missile to ensure missile is supported by bomb rack hooks and swaybraces are properly seated.

- e. Rotate ground safety handle to the LOCKED position.
- f. Remove weapon tiedown straps.
- 2. (If applicable) Bomb hoist loading:
  - a. Hoist missile until suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - c. Ease hoist until missile weight is supported by bomb rack suspension hooks.
  - d. Gently shake missile to ensure missile is supported by the bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
- 3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and weapon.
- 4. Remove protective covers from missile and umbilical cable connectors.

**NOTE**

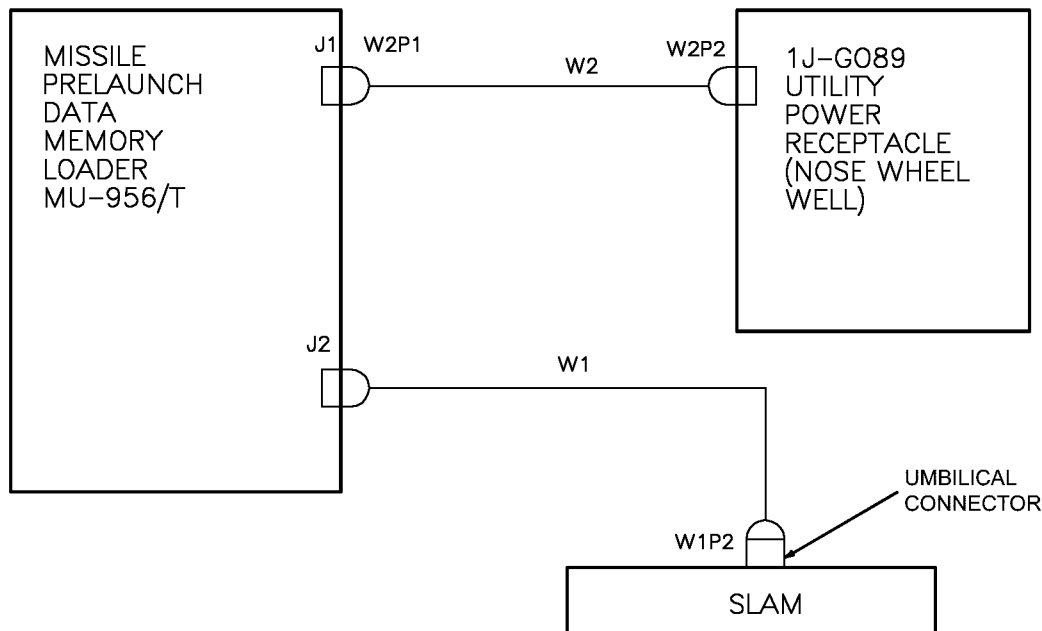
(AGM-84E) Mission data will be loaded by authorized personnel only.

- 5. (AGM-84E) Load mission data into missile (Figure 22-2 and Table 22-1).
- 6. Ensure umbilical cable bail is connected to bail bar (Figure 3-12).
- 7. Line up umbilical cable connector with large keyway on missile connector.
- 8. Push umbilical connector straight down and turn connector clockwise until the detent is felt and the locking pin is visible.
- 9. Ensure slack exists in umbilical cable and bail and the bail is not twisted.
- 10. Install wings as follows (Figure 22-3):
  - a. (If applicable) Remove and retain the protective caps.

**NOTE**

The upper right wing position requires wing BSU-43/B. Wings BSU-42/B are interchangeable at the remaining positions.

- b. Position wing on wing root fitting.
- c. Align the alignment pin on wing with alignment hole in the missile sustainer section.



**Figure 22-2. Memory Loader Hookup**

- d. Apply downward pressure to snap the latch pin into the locking notch.
  - e. Ensure the latch pin has engaged the locking notch.
  - f. Pull on wing gently to ensure the wing is secured on missile.
11. Install control fins as follows (Figure 22-3):
- a. (If applicable) Remove and retain the control fin actuator shaft protective caps.
  - b. (If applicable) Remove and retain the control fin bolt protective cover.
  - c. Position control fin so the spring pin aligns with spring pin recess, and insert fin shaft into fin actuator shaft.

**CAUTION**

Rotation of bolt head clockwise past first click, could damage fin/weapon.

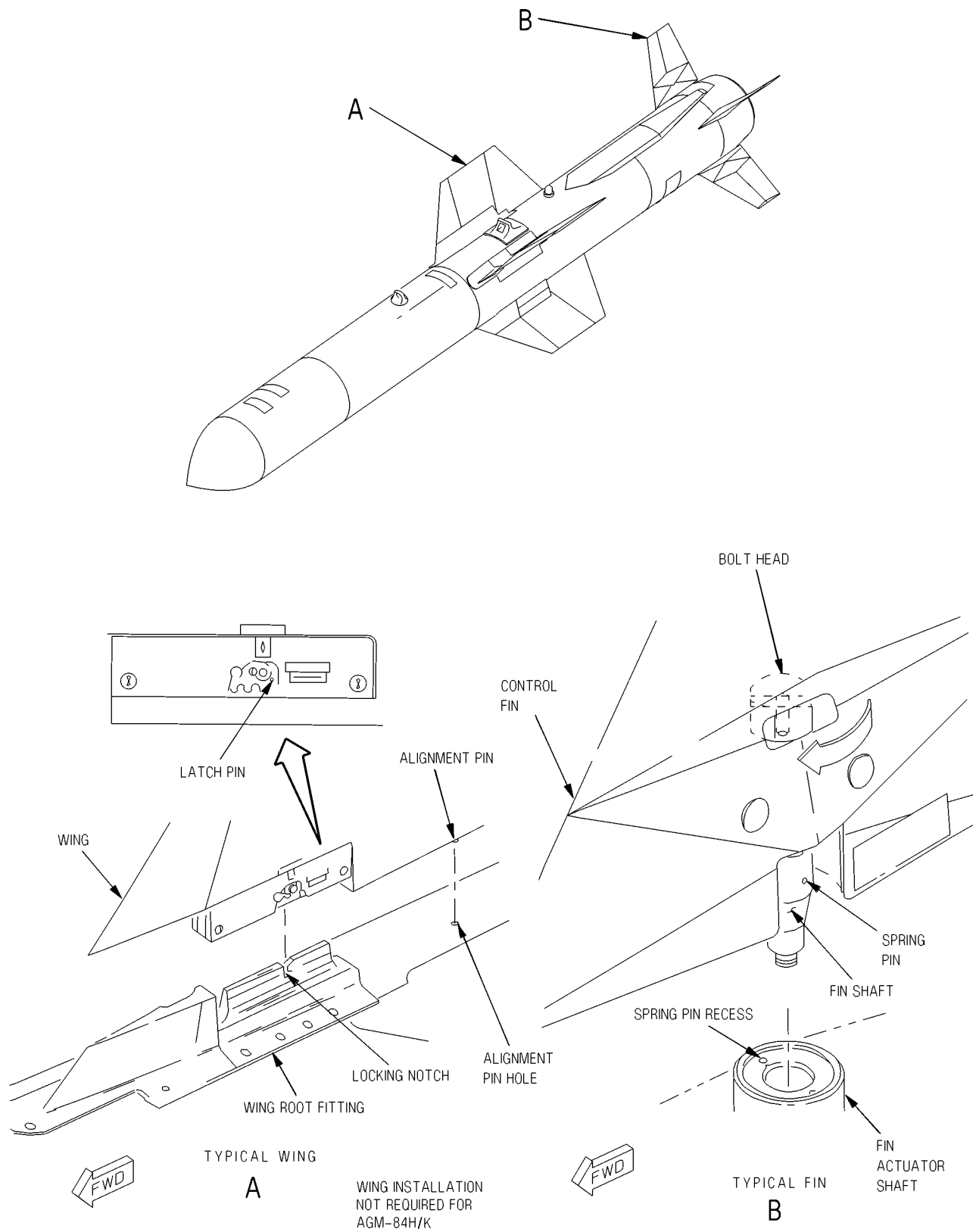
- d. Insert a Phillips head screwdriver or similar tool into the hole in bolt head, and rotate fin bolt head clockwise until the head clicks once.



**Table 22-1. Mission Data Loading**

<b>CHECK STEP</b>	<b>PROCEDURE</b>	<b>RESULT</b>
1.  2.	Connect Memory Loader power cable between utility power jack (nose wheelwell) and J1 of Memory Loader (Figure 22-2).  Connect W1 cable between SLAM umbilical connector and Memory Loader connector J2.	
<div style="border: 2px solid black; padding: 5px; display: inline-block;"><b>WARNING</b></div>		
Prior to applying electrical power cockpit switches and controls must be ready to receive power.		
3. 4. 5. 6.	Connect electrical power to aircraft.  On GND PWR control panel, position EXT PWR switch to RESET and back to NORM.  Position NIGHT/DAY switch on Memory Loader as applicable.  Verify that Memory Loader is loaded with the Mission Data and eight hours have not elapsed since program load. If eight hours have elapsed, return Memory Loader to IMA for programming prior to use.	Time marked on Memory Loader.
<b>NOTE</b>  Step 7 contains a timed sequence. Read entire step before performing.		
7.  8. 9. 10. 11. 12. 13. 14.	Place 5VDC/OFF/28VDC switch to 28VDC.  Set mission code and wing station numbers into thumbwheel switches as directed.  Momentarily place transfer data switch to TRANSFER DATA.  Place 5VDC/OFF/28VDC switch to OFF.  On GND PWR control panel, set EXT PWR switch to OFF.  (If applicable) Disconnect and transfer W1 connector to next missile to be programmed.  Repeat steps 4 through 12 for each additional missile to be programmed.  Disconnect and remove Memory Loader.	POWER – ON; IN PROGRESS, VALID/GO, NOT VALID/NO GO – ON for approximately 2 seconds then OFF; IN PROGRESS – ON, VALID/GO, NOT VALID/NO GO – OFF; VALID/GO – ON; IN PROGRESS – OFF.  Selected codes.  IN PROGRESS – ON; (2 seconds – 1 minute), VALID/GO – ON; IN PROGRESS – OFF; POWER – OFF.  None.

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**Figure 22-3. AGM-84 Series Wing and Fin Installation**

**NOTE**

For logistic movement, the umbilical cable will be connected to the missile and pylon. The pressure probe arming lanyard will be securely taped to the missile and not connected to the aircraft.

12. (If applicable) Insert the pressure probe arming lanyard swivel loop into the forward arming unit.
13. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

**NOTE**

Do not install auxiliary cartridge.

14. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps. Auxiliary cartridge not installed (Paragraph 5-24).
15. Secure access doors and panels.
16. Place WEAPON LOADED sign in cockpit.
17. Remove tools and handling/loading equipment from area.

**22-13. POSTLOADING INSPECTION.**

22-14. Perform Postloading Inspection for missiles loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. Place WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.

**NOTE**

For logistic movement, the umbilical cable will be connected to the missile and pylon. The pressure probe arming lanyard will be securely taped to the missile.

5. Umbilical cable connected to missile connector and aircraft pylon. Bail connected to bail bar and is not twisted.
6. (If applicable) Pressure probe arming lanyard swivel loop inserted in forward arming unit.
7. Cartridges installed in all loaded bomb racks, cartridge retainers and auxiliary cartridge caps tight. Auxiliary cartridge not installed.
8. Suspension hooks are open on unloaded stations.
9. (If applicable) Radome/nose cover and exit cover assembly installed.

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10. Fins and wings properly installed and secure.

11. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).

12. (AGM-84E) Mission data loaded in missile.

13. Tools and handling/loading equipment removed from area.

14. Report status of aircraft to proper authority.

**22-15. PRIOR TO LAUNCH.**

22-16. Prior to launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows.

22-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Close and secure access doors.
3. (If installed) Remove radome protective cover, air data probe cover and exit cover assembly.

22-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**NOTE**

The following steps should be performed in the arming area. However, these steps may be performed in the rearming area when necessitated by operational requirements.

1. Position safety person in view of aircrew.
2. (If applicable) Indicate to aircrew to perform SLAM marriage check on all loaded stations.

22-19. **ARMING AREA.** There are no procedures to be performed for AGM-84 missiles in the arming area.

**22-20. AFTER LANDING OR GROUND ABORT.**

22-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded missiles as a result of a ground abort.

22-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

22-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for AGM-84 missiles in the dearming area before engine shutdown.

22-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

**NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

2. (If applicable) Place WEAPON LOADED sign in cockpit.
3. Position all armament switches in accordance with Table 5-1.

**WARNING**

(AGM-84D/E) Do not disconnect umbilical from missile if missile has received intent-to-launch (ITL) signal. If ITL has been initiated, move aircraft to safe area/download missile and move missile to safe area until 2.5 hours have elapsed from time ITL was initiated. Remain clear of aft end of missile.

**NOTE**

Intent-to-launch signal initiates the battery. Battery may remain charged for 2.5 hours. Disconnecting the missile umbilical from missile may actuate missile pyrotechnics if battery is charged.

4. (AGM-84D/E) Verify ITL condition (Initiated/Not Initiated).

**WARNING**

(AGM-84D/E) Power must be removed from aircraft before disconnecting adapter cable.

5. (AGM-84D/E, ITL Initiated) Disconnect missile umbilical only from aircraft and tape to missile.
6. (As applicable) Install umbilical cable protective cover.
7. (If applicable) Install radome/IIR/nose covers.
8. (As applicable) Ensure the two missile booster receptacle covers are snap-locked in place and no FOD is in engine exit duct. Install engine exit cover.

**WARNING**

(AGM-84H/K) The air data probe may be hot. Do not touch or install probe cover until probe cools.

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9. (AGM-84H/K) Install air data probe cover.
10. (As applicable) Remove arming lanyard from empty stations.
11. Report status of aircraft to proper authority.

22-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 22-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 22-6).
  - b. Perform Weapon Inspection for weapons to be loaded (Paragraph 22-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 22-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 22-6).
  - b. Perform Weapon Inspection (Paragraph 22-8).
4. Perform Postloading Inspection (Paragraph 22-13).
5. Perform Prior to Launch procedures (Paragraph 22-15).

**22-26. WEAPON UNLOADING.**

22-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify that ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps, and remove cartridges on stations to be unloaded.

**WARNING**

Remain clear of aft end of missile.

(AGM-84D/E) Power must be removed from aircraft before disconnecting adapter cable.

(AGM-84 D/E) Do not disconnect umbilical from missile if missile has received ITL signal. If ITL has been initiated download missile and move missile to safe area until 2.5 hours have elapsed from time ITL was initiated.

**NOTE**

(AGM-84H/K) Umbilical can be disconnected from both aircraft and missile.

7. (AGM-84D/E, ITL Initiated) Disconnect missile umbilical only from aircraft and tape to missile.
8. (AGM-84D/E, ITL Not Initiated or AGM-84H/K) Disconnect missile umbilical from aircraft and missile by turning cable connector counterclockwise and pulling straight out.
9. (If applicable) Disconnect pressure probe arming lanyard from forward arming unit and tape to missile.

**WARNING**

(AGM-84E) Mission data must not be unloaded if missile has received ITL signal.

**NOTE**

Mission data will only be unloaded by authorized personnel.

10. (AGM-84E, ITL Not Initiated) Unload mission data from missile (Table 22-2).
11. (If applicable) Install radome/IIR/nose protective cover, air data probe cover and exit cover assembly.
12. (AGM-84D/E) Remove wings as follows (Figure 22-3):
  - a. Apply forward force to both sides of latch pin.
  - b. Lift wing off wing root fitting.
13. Remove control fins as follows (Figure 22-3).
  - a. Insert a Phillips head screwdriver or similar tool into hole in bolt head and turn fin bolt counterclockwise until control fin releases.
  - b. Remove control fin by lifting.

**Table 22-2. Mission Data Downloading**

<b>CHECK STEP</b>	<b>PROCEDURE</b>	<b>RESULT</b>
1.	Connect Memory Loader power cable between utility power jack (nose wheelwell) and J1 of Memory Loader (Figure 22-2).	
2.	Connect W1 cable between SLAM umbilical connector and Memory Loader.	
<div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <b>WARNING</b> </div> <p>Prior to applying electrical power, cockpit switches and controls must be ready to receive power.</p>		
3.	Connect electrical power to aircraft.	
4.	On GND PWR control panel, position EXT PWR switch to RESET and back to NORM.	
5.	Position NIGHT/DAY switch on Memory Loader, as applicable.	
<p style="text-align: center;"><b>NOTE</b></p> <p>Step 6 contains a timed sequence. Read entire step before performing.</p>		
6.	Place 5VDC/OFF/28VDC switch to 28VDC.	<p>(Memory Loaded) POWER – ON; IN PROGRESS, VALID/GO, NOT VALID/NO GO – ON for approximately 2 seconds then OFF; IN PROGRESS – ON, VALID/GO – ON; NOT VALID/NO GO – OFF; VALID/GO – ON; IN PROGRESS – OFF.</p> <p>(Memory not Loaded) POWER – ON; IN PROGRESS, VALID/GO, NOT VALID/NO GO – ON for 2 seconds; IN PROGRESS – ON for 2 seconds then OFF; VALID/GO – ON or VALID/GO – ON for 2 seconds then OFF.</p>
7.	Set mission code to 888888, station code to 8.	888888/8.
8.	Momentarily place PURGE DATA switch to PURGE DATA.	IN PROGRESS – ON approximately 2 seconds; VALID/GO – ON, IN PROGRESS – OFF.
9.	Place 5VDC/OFF/28VDC switch to OFF.	Power – OFF.
10.	On GND PWR control panel, set EXT PWR switch to OFF.	
11.	(If applicable) Disconnect and transfer W1 connector to next missile to be deprogrammed.	
12.	Repeat steps 4 through 11 for each additional missile to be deprogrammed.	
13.	Disconnect and remove Memory Loader.	



- c. Install control fin actuator shaft protective covers.
- d. Install protective covers on the control fin bolts.

**CAUTION**

Verify handling/loading equipment is configured to accept weapon being unloaded.

(AGM-84H/K) To prevent damage to missile during downloading, the ADU-801/E adapters must be properly positioned for downloading. Position ADU-801/E adapters as follows:

- Forward Adapters - Chock assembly slide block positioned in forward position with swing arm positioned inboard.
- Aft Adapters - Chock assembly slide block positioned in aft position with swing arm positioned outboard.

(AGM-84H/K) Missile must be positioned nose forward on skid/transporter.

- 14. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
- 15. Position handling/loading equipment under station to be unloaded and secure.
- 16. (If applicable) Bomb truck/weapon loader unloading:
  - a. (AGM-84D/E) Raise bomb truck/weapon loader until missile is supported.

**CAUTION**

(AGM-84H/K) Ensure ADU-801/E adapters match up with weapon hardpoints (marked on weapon) prior to supporting missile.

(AGM-84K-1) Use arrow painted on side of weapon to help align weapon hardpoint with forward ADU-801/E adapters (Figure 22-1).

- b. (AGM-84H/K) While raising bomb truck/weapon loader, guide the aft ADU-801/E adapters over wings, and allow adapters to rest on top of wings while continuing to raise bomb truck/weapon loader.

**CAUTION**

(AGM-84H/K) To ensure no movement of missile while unloading/transporting, tightly secure missile with tiedown straps.

- c. Secure missile to handling/loading equipment with weapon tiedown straps.
- 17. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install hoisting band and trolleys on missile.

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- b. Operate hoist until hoist is supporting missile.
- c. Position one person at nose and one person at tail of missile to steady and guide missile onto handling equipment.

22-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:

**WARNING**

Prior to lowering the missile, ensure that all pullout connections between the aircraft and missile are disconnected.

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower missile.

**CAUTION**

(AGM-84H/K) Ensure ADU-801/E adapters match up with weapon hardpoints (marked on missile) prior to lowering missile.

(AGM-84K-1) Use arrow painted on side of weapon to help align weapon hardpoint with forward ADU-801/E adapters (Figure 22-1).

- d. (AGM-84H/K) While lowering missile, guide the aft ADU-801/E adapters over wings and allow adapters to rest on top of wings while continuing to lower missile onto handling equipment.

**CAUTION**

(AGM-84H/K) To ensure no movement of missile while transporting, tightly secure missile with tiedown straps.

- e. Secure missile to handling equipment with weapon tiedown straps.

<b>WARNING</b>
----------------

Missile with activated battery (ITL initiated) must be moved to a safe area until 2.5 hour waiting period has elapsed.

3. Remove handling/loading equipment with missile from under aircraft.
4. Install cartridge retainers and auxiliary cartridge caps.
5. (If applicable) Remove adapter cable.
6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove weapon and handling/loading equipment from area.



**SECTION XXIII**  
**AGM-88 HARM MISSILES**

**23-1. INTRODUCTION.**

23-2. This section contains loading and unloading information for the missile listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading and the missiles checked out. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

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**23-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

23-4. ASE authorized for loading AGM-88 missiles is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

23-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

1. AN/AWM-54 Aircraft Firing Circuit Test Set or Firing Circuit Test Set AN/AWM-102 with W6 Adapter.

**23-6. AIRCRAFT PREPARATION/INSPECTION.**

23-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3 and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. Verify adapter cable installed (Figure 3-13).

**23-8. WEAPON INSPECTION.**

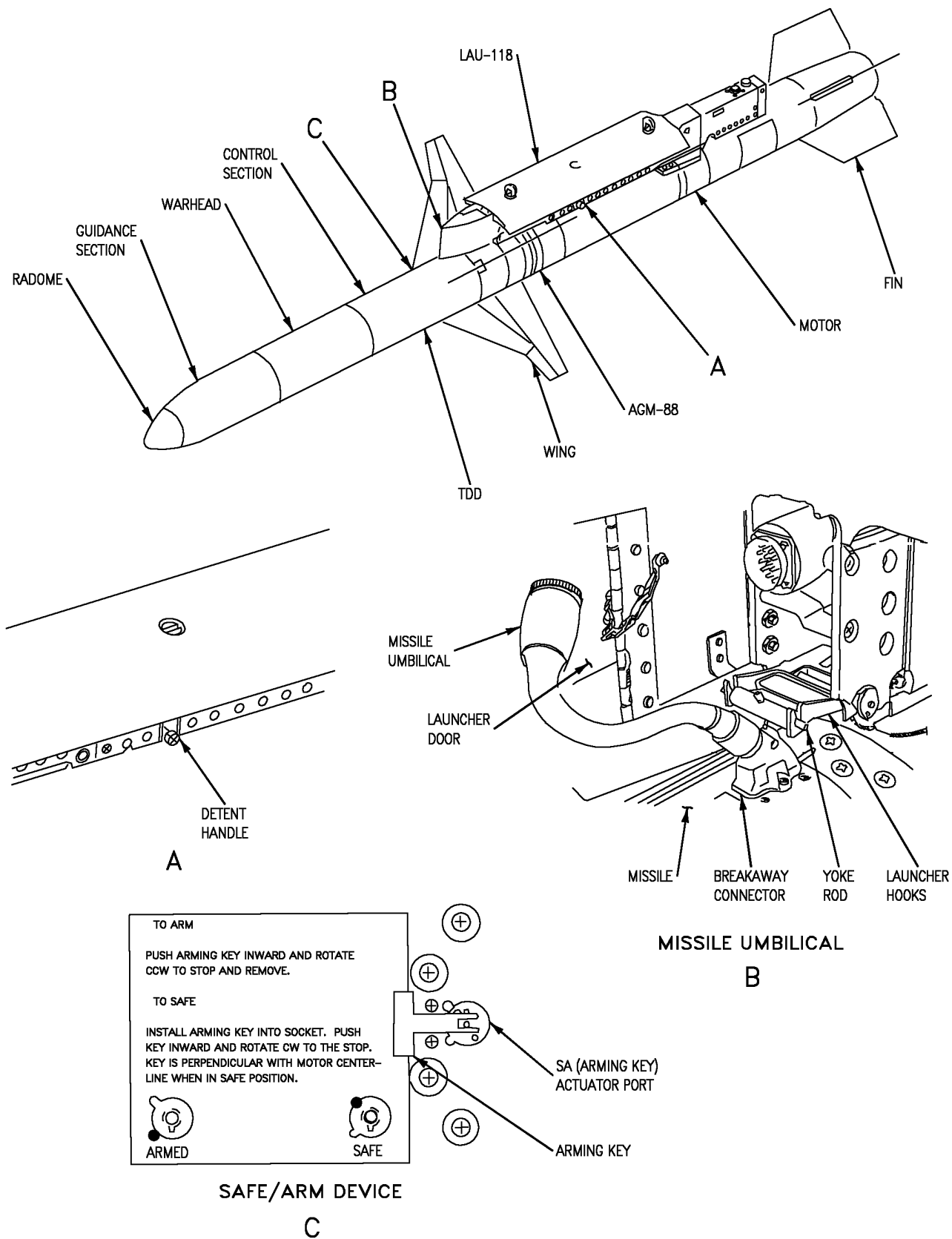
23-9. Reject missile and notify proper authority if inspection reveals missile is not acceptable for loading. Inspect missiles for loading as follows (Figure 23-1):

**NOTE**

The following procedures assume that the missile has been assembled except for wings and fins and preloaded on accessory suspension equipment (PASE).

1. Ensure that SAFE/ARM is positioned to SAFE and arming key is folded down.

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**Figure 23-1. AGM-88 HARM Missile Inspection**

**WARNING**

Battery electrolyte is a clear, odorless, highly caustic fluid, which is dangerous to skin and eyes. Remain clear and notify proper authority.

2. Inspect control section vents, verify electrolyte not leaking.
3. Remove radome cover.
4. Inspect radome for scratches, breaks and cracks. Reinstall radome cover.
5. Inspect missile and launcher for damage; preloading data marked on launcher, 30" lugs installed, both launcher umbilicals clean and not damaged.
6. Verify TDD free from moisture, windows not scratched or broken.
7. Verify rocket motor seal is intact.
8. Verify missile umbilical plug is clean and not damaged.
9. Ensure missile breakaway connector yoke rod is mated with launcher hooks.
10. Ensure launcher detent is fully seated, detent handle locked.
11. Verify launcher is locked on missile.

**CAUTION**

Exercise care when handling wings and fins.

12. Inspect wings and fins for dents, cracks, distortion and corrosion.

**23-10. WEAPON LOADING.**

23-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 23-6) and Weapon Inspection (Paragraph 23-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install bomb hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with PASE under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33):

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- a. Install trolleys on launcher.
- b. Operate hoist to remove slack from cable.
- c. Position one person at nose and one person at tail of PASE to steady PASE while hoisting.
- d. Remove weapon tiedown straps securing PASE to handling equipment.

7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

23-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise PASE until suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until PASE weight is supported by bomb rack suspension hooks.
  - d. Gently shake PASE to ensure PASE is supported by bomb rack hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
  - f. Remove weapon tiedown straps.
2. (If applicable) Bomb hoist loading:

**CAUTION**

PASE is nose-heavy and must be supported while hoisting.

- a. Hoist PASE until suspension lugs enter bomb rack suspension hooks and hooks latch.
- b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
- c. Ease hoist until PASE weight is supported by bomb rack suspension hooks.
- d. Gently shake PASE to ensure PASE is supported by the bomb rack suspension hooks and swaybraces are properly seated.
- e. Rotate ground safety handle to the LOCKED position.



3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and launcher.

**WARNING**

Do not connect missile umbilical cable to launcher until directed.

**CAUTION**

Do not connect pylon adapter cable to launcher dummy receptacle.

4. Connect pylon adapter cable to launcher electrical connector.

**CAUTION**

Exercise care when handling wings and fins.

5. Install fins as follows:

**CAUTION**

Ensure BSU-60/B fin cam lock does not rotate 360°.

- a. Rotate fin latch 90° to allow engagement of the pins in motor housing.
  - b. Install fin on motor and slide aft.
  - c. Verify that base of fin is flush with motor and rotate latch 90° clockwise to lock.
6. Install wings as follows:
    - a. Depress pin in wing latch mechanism and insert wing into hub until plunger snaps back into locked position.
    - b. Pull wing to verify locked position.
  7. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

**NOTE**

Do not install auxiliary cartridge.

8. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps. Auxiliary cartridge not installed (Paragraph 5-24).
9. Secure access doors and panels.
10. Place WEAPON LOADED sign in cockpit.
11. Remove tools and handling/loading equipment from area.

**23-13. POSTLOADING INSPECTION.**

23-14. Perform Postloading Inspection for missiles loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Launcher electrically connected.
6. Cartridges installed in all loaded bomb racks, cartridge retainers and auxiliary cartridge caps tight (all stations). Auxiliary cartridge not installed.
7. Suspension hooks are open on unloaded stations.
8. Missile SAFE/ARM device is positioned to SAFE and arming key is folded down.
9. Breakaway connector yoke installed in launcher hooks and secured.
10. Missile umbilical not connected.
11. Fins and wings properly installed.
12. Radome cover installed.
13. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
14. Tools and handling/loading equipment removed from area.
15. Report status of aircraft to proper authority.

**23-15. PRIOR TO LAUNCH.**

23-16. Prior to Launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform prior to launch procedures as follows.

23-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Remove radome cover.

23-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during stray voltage check.

**NOTE**

The following steps should be performed in the arming area. However, these steps may be performed in the rearming area when necessitated by operational requirements.

1. Position safety person in view of aircrew.

**WARNING**

If stray voltage is detected, do not connect umbilical to launcher. Notify proper authority.

2. Notify aircrew of intention to perform a stray voltage check.
3. Perform stray voltage check on each loaded station (Paragraph 5-34).
4. Connect missile umbilical to launcher.
5. Ensure launcher umbilical yoke rod secure in launcher umbilical fitting hooks.
6. Secure access doors.

23-19. **ARMING AREA.** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during arming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to arm aircraft.

**CAUTION**

Overtravel of arming key beyond ARMED will cause damage to the SAFE/ARM device.

3. Unfold and fully depress arming key.

**NOTE**

While rotating the arming key to ARMED, allow spring tension to slowly push the arming key out.

4. Rotate arming key counterclockwise to ARMED.
5. Remove arming key.
6. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

**23-20. AFTER LANDING OR GROUND ABORT.**

23-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

23-22. **SAFING.** After Landing or Ground Abort Safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

23-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming aircraft.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to safe aircraft.
3. Ensure ground safety handles LOCKED on loaded stations.

**CAUTION**

Overtravel of the arming key beyond SAFE will cause damage to the SAFE/ARM device.

4. Insert and fully depress arming key; slowly rotate clockwise to SAFE and fold.
5. Indicate to aircrew that aircraft is safe, and personnel and equipment are clear.

23-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.

**WARNING**

If any component is missing, loose or damaged, notify proper authority.

2. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
  4. Disconnect missile umbilical from launcher receptacle.
  5. Install radome cover.
  6. Report status of aircraft to proper authority.
- 23-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.
1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 23-20).
  2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
    - a. Perform Aircraft Preparation/Inspection (Paragraph 23-6).
    - b. Perform Weapon Inspection for missiles to be loaded (Paragraph 23-8).
    - c. Load PASE according to Weapon Loading procedures (Paragraph 23-10).
  3. For aircraft recovered with loaded stations, perform the following:
    - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 23-6).
    - b. Perform Weapon Inspection (Paragraph 23-8).
  4. Perform Postloading Inspection (Paragraph 23-13).
  5. Perform Prior to Launch procedures (Paragraph 23-15).

**23-26. WEAPON UNLOADING.**

23-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify that ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. Verify that missile SAFE/ARM device is in SAFE position.
8. Disconnect adapter cable from launcher.
9. Remove missile wings and fins and install protective covers in wing shaft holes.

<b>CAUTION</b>
----------------

Verify handling/loading equipment is configured to accept weapon being unloaded.

10. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
11. Position handling/loading equipment under station to be unloaded and secure.
12. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until PASE is supported.
  - b. Secure PASE to handling/loading equipment with weapon tiedown straps.
13. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install trolleys on launcher.
  - b. Operate hoist until hoist is supporting PASE.

c. Position one person at nose and one person at tail of PASE to steady and guide PASE onto handling equipment.

23-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.

- b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:

**CAUTION**

PASE is nose heavy and must be supported while unloading.

- a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower PASE onto handling equipment.
  - d. Secure PASE to handling equipment with weapon tiedown straps.
3. Remove handling/loading equipment with PASE from under aircraft.
4. Install cartridge retainers and auxiliary cartridge caps.
5. (If applicable) Remove adapter cable.
6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove PASE and handling/loading equipment from area.





**SECTION XXIV**  
**AGM-154 JOINT STANDOFF WEAPON (JSOW)**

**24-1. INTRODUCTION.**

24-2. This section contains loading and unloading information for the missile listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading and the missile is checked out and fully assembled for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AGM-154 Series

**24-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

24-4. ASE authorized for loading AGM-154 series missiles is listed in Table 5-7. Refer Table 5-7 to match equipment with weapon to be loaded.

24-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None

**24-6. AIRCRAFT PREPARATION/INSPECTION.**

24-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Ensure swaybraces are inspected and adjusted to the normal position on stations to be loaded (Paragraph 5-10).

**NOTE**

For aircraft simulation, close hooks on selected stations. No weapon loading is required.

2. Ensure suspension hooks are open on stations to be loaded.
3. Verify adapter cable installed, bail installed (Figure 3-16).

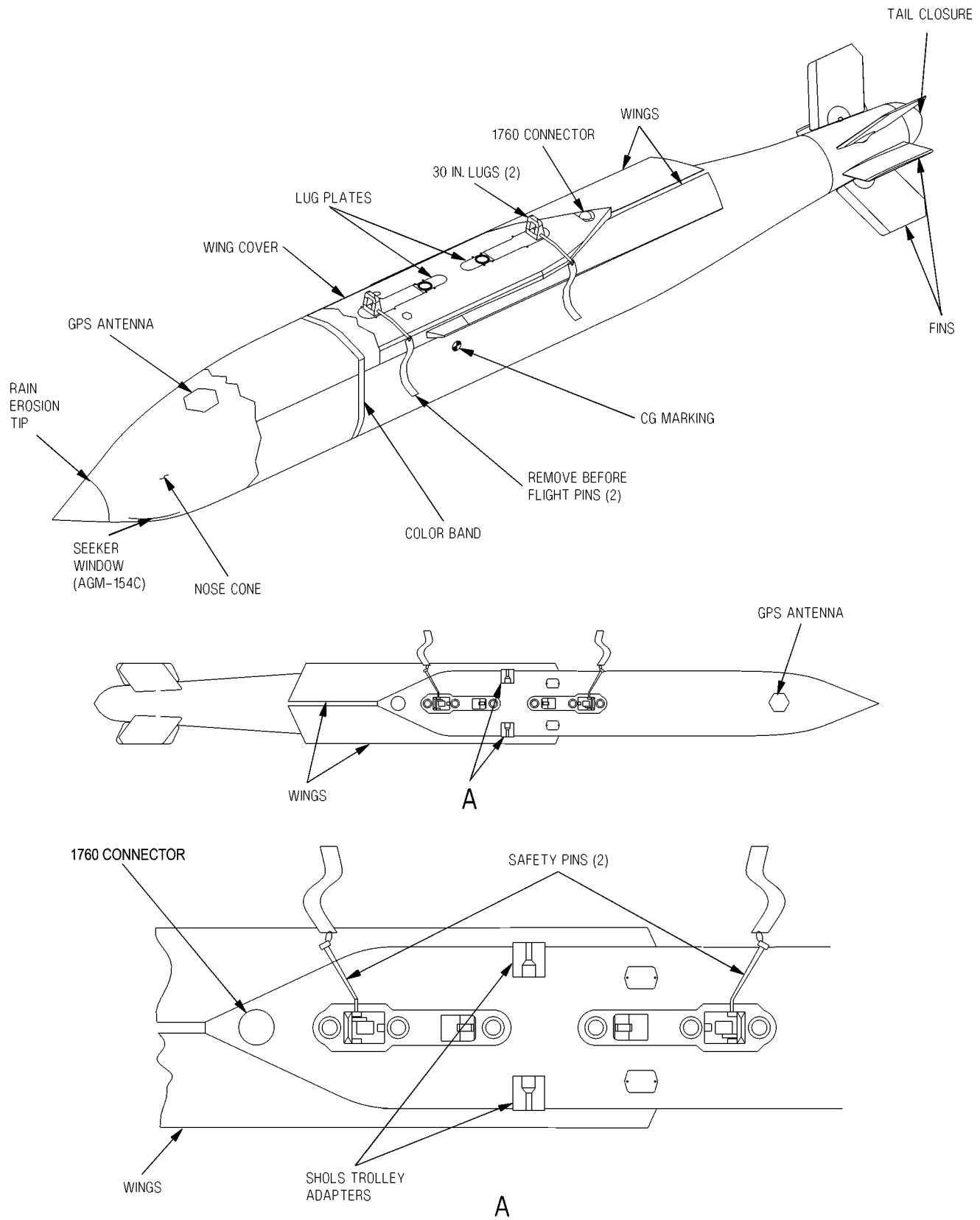
**24-8. WEAPON INSPECTION.**

24-9. Reject weapon and notify proper authority if inspection reveals weapon is not acceptable for loading. Inspect weapon for loading as follows (Figure 24-1):

**NOTE**

Reject weapon if any nicks, gouges, cuts or scratches reveal aluminum. Notify proper authority.

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**AGM-154 Joint Standoff Weapon (JSOW)**



**Figure 24-1. AGM-154 (JSOW) Missile Inspection**

1. Inspect fully assembled weapon for damage, ensuring there are no chips, cracks, or dents in/on any surface.
2. Verify color code markings visible and correct for mission.

**WARNING**

Suspension lugs are spring loaded and held upright with retaining pins. Use extreme care when inspecting lugs, otherwise injury to personnel could occur.

3. Verify 30-inch suspension lugs installed and secure; retaining pins installed and not damaged.
4. Inspect skin joints for separation, loose fasteners or protruding gasket material.
5. Inspect wings for cracks, chips or defects.

**NOTE**

Reject weapon if GPS antenna displays any nicks, gouges, cuts or scratches that reveal any copper material. Notify proper authority.

6. Verify GPS antenna not damaged.

**NOTE**

Reject weapon if rain erosion tip is loose or missing.

7. Ensure rain erosion tip is secure, not worn.
8. (AGM-154C) Inspect seeker window for the following:
  - a. Window clean; not cracked.
  - b. No more than two scratches, less than 4 inches long.
  - c. No chips larger than 1/4 inch.
  - d. No more than two pits, 1/8 inch diameter or larger.
9. Verify adapter cable connector is clean and free of damage or defects.
10. Verify fins are aligned parallel to weapon and not damaged, defective or loose (Figure 24-1).
11. Verify horizontal stabilizers are not damaged, defective or loose.

**24-10. WEAPON LOADING.**

24-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 24-6) and Weapon Inspection (Paragraph 24-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with weapon under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33):
  - a. Install hoisting adapters on bomb rack.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of weapon to steady weapon while hoisting.
  - d. Remove weapon tiedown straps securing weapon to handling equipment.
7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

24-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until weapon weight is supported by bomb rack suspension hooks.
- d. Gently shake weapon to ensure weapon is supported by bomb rack suspension hooks and swaybraces are properly seated.
- e. Rotate ground safety handle to the LOCKED position.
- f. Remove weapon tiedown straps.

2. (If applicable) Bomb hoist loading:

**NOTE**

Do not use control surfaces of weapon for hand hold.

- a. Hoist weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - c. Ease hoist until weapon weight is supported by bomb rack suspension hooks.
  - d. Gently shake weapon to ensure weapon is supported by suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and launcher.
  4. Remove protective covers from weapon and adapter cable connectors.
  5. Ensure adapter cable bail is connected to the bail bar (Figure 3-16); connect adapter cable to missile.
  6. Remove 30-inch lug retaining pins.
  7. Perform BIT check as follows:
    - a. Position all armament switches in accordance with Table 5-1.
    - b. Verify all loaded stations are safe.
    - c. Connect electrical power to aircraft.
    - d. (If applicable) Apply cooling air.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- e. On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1, 2 and 3 to B ON for 3 seconds.
- f. Position the left and right DDI power switches to DAY (allow warm-up time).
- g. On F/A-18C and F/A-18D 163427 thru 163782, position the Horizontal Indicator OFF/NIGHT/DAY switch to DAY.

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h. On F/A-18C and F/A-18D 163985 and UP; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, position the Multipurpose Color Display (MPCD) OFF/NGT switch to NGT and the DAY/AUTO switch as applicable (allow for warm-up).

i. On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.

j. On the left DDI, press the BIT pushbutton.

k. On the right DDI, press and release the MENU pushbutton until the STORES option is displayed.

l. On the right DDI, press and release the STORES pushbutton.

### **NOTE**

After SMS BIT completed and PBIT GO is displayed, JSOW may be selected and STEP option will cycle priority stations.

If JSOW is not selected, all onboard stations will be powered up and BIT tested.

If SMS BIT displays WFAIL, repeat BIT to confirm failure.

m. After SMS BIT, applicable JSOW acronym will be displayed, with quantity of 1, at each loaded station as follows:

(1) AGM-154A-JSAGO.

(2) AGM-154B-JSBGO.

(3) AGM-154C-JSCGO.

n. On F/A-18C and F/A-18D 163427 thru 163782, position the Horizontal Indicator OFF/NIGHT/DAY switch to OFF; display area off.

o. On F/A-18C and F/A-18D 163985 and UP; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, position the MPCD OFF/NGT switch to OFF; display area off.

p. Position the left and right DDI power switches to OFF; display areas off.

q. On the GND PWR control panel, position the EXT PWR switch to OFF.

r. (As applicable) Remove electrical power from aircraft.

8. Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps (Paragraph 5-24).

9. Place WEAPON LOADED sign in cockpit.

10. Remove tools and handling/loading equipment from area.

### **24-13. POSTLOADING INSPECTION.**

24-14. Perform Postloading Inspection for missiles loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Adapter cable connected and pull-out bail attached to bail bar.
6. 30-inch suspension lug retaining pins removed.
7. Cartridges installed in all loaded bomb racks, cartridge retainers and auxiliary cartridge caps tight.
8. BIT check performed.
9. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
10. Tools and handling/loading equipment removed from area.
11. Report status of aircraft to proper authority.

### **24-15. PRIOR TO LAUNCH.**

24-16. Prior to Launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform Prior to Launch procedures as follows.

24-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Secure access doors and panels.

24-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed.

24-19. **ARMING AREA.** There are no procedures to be performed in the arming area.

### **24-20. AFTER LANDING OR GROUND ABORT.**

24-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

24-22. **SAFING.** After Landing or Ground Abort Safing procedures are performed in a designated dearming area before engine shutdown, and in the dearming or rearming area after engine shutdown.

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24-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed in the dearming area.

24-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.
4. Report status of aircraft to proper authority.

24-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 24-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 24-6).
  - b. Perform Weapon Inspection (Paragraph 24-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 24-10).
3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 24-6).
  - b. Perform Weapon Inspection (Paragraph 24-8).
4. Perform Postloading Inspection (Paragraph 24-13).
5. Perform Prior to Launch procedures (Paragraph 24-15).



## **24-26. WEAPON UNLOADING.**

24-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify that ground safety handle is LOCKED on all loaded stations.

### **WARNING**

If an Intent To Launch (ITL) is verified, wait two hours before proceeding with unloading. After two hours, disconnect weapon adapter cable at pylon.

If weapon must be downloaded prior to two hour elapsed time from ITL, use cargo strap or aircraft tiedown chain. Wrap around weapon and wings approximately 3 inches aft of adapter cable receptacle.

6. Verify NO attempt to launch was made.
7. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
8. Install 30-inch suspension lug retaining pins.
9. Disconnect adapter cable, install covers.

### **CAUTION**

Verify handling/loading equipment is configured to accept weapon being unloaded.

10. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
11. Position handling/loading equipment under station to be unloaded and secure.
12. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until weapon is supported.
  - b. Secure weapon to handling/loading equipment with weapon tiedown straps.
13. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install hoist adapters on the bomb rack.

**AGM-154 Joint Standoff Weapon (JSOW)**

- b. Install trolleys on the weapon.
- c. Operate hoist until hoist is supporting weapon.

<b>CAUTION</b>
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Do not use control surfaces of weapon for hand hold.

- d. Position one person at nose and one person at tail to steady and guide weapon onto handling equipment.

24-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower weapon onto handling equipment.
  - d. Secure weapon to handling equipment with weapon tiedown straps.
3. Remove handling/loading equipment with weapon from under aircraft.
4. Install cartridge retainers and auxiliary cartridge caps.
5. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
6. Secure access doors and panels.
7. (If applicable) Remove/stow WEAPON LOADED sign.
8. Remove weapon and handling/loading equipment from area.

**SECTION XXV**  
**TALD/ITALD**

**25-1. INTRODUCTION.**

25-2. This section contains loading and unloading information for the TALD/ITAD listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

TALD (Tactical Air Launched Decoy)

ITALD (Improved Tactical Air Launched Decoy)

**25-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

25-4. ASE authorized for loading the TALD/ITALD is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

25-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

1. TALD swaybrace preset gage.
2. ITALD swaybrace preset gauge.
3. Lug alignment plate (optional) (locally manufactured, refer to NAVAIR 01-ADM141C-1).
4. (TALD) (If required) TTU-473/E Decoy Tester-Programmer. (Refer to NAVAIR 01-A/B37U-1 for instruction and use.)
5. (TALD/ITALD) (If required) TTU-585/E Decoy Tester-Programmer. (Refer to NAVAIR 01-ADM141C-1 for instruction and use.)

**25-6. AIRCRAFT PREPARATION/INSPECTION.**

25-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, Paragraph 5-14, and as follows:

1. Verify BRU-32 swaybraces in normal position and properly seated against BRU-42.
2. Verify adapter cable (PN 1453AS395) installed (Figure 3-7).
3. Verify BRU-42 suspension hooks are open on stations to be loaded.

**NOTE**

(TALD) Preset for BRU-42 shoulder stations is 7/16 inch for forward inboard swaybrace and 9/16 inch for aft inboard swaybrace. Position jamnut on underside of swaybrace.

(ITALD) Preset for BRU-42 shoulder station is 9/16 inch for forward inboard swaybrace and 11/16 inch for aft inboard swaybrace. Position jamnut on underside of swaybrace.

4. Ensure swaybraces preset on stations being loaded.
5. Retract swaybraces and lock jamnuts on stations not being loaded.

**25-8. WEAPON INSPECTION.**

25-9. Reject TALD/ITALD and notify proper authority if inspection reveals TALD/ITALD is not acceptable for loading.

1. Inspect TALD for loading as follows (Figure 25-1):
  - a. Ensure that wing safing pin is installed and lanyard bridle is attached to safing pin.
  - b. Ensure that TALD electrical safing pin is installed.

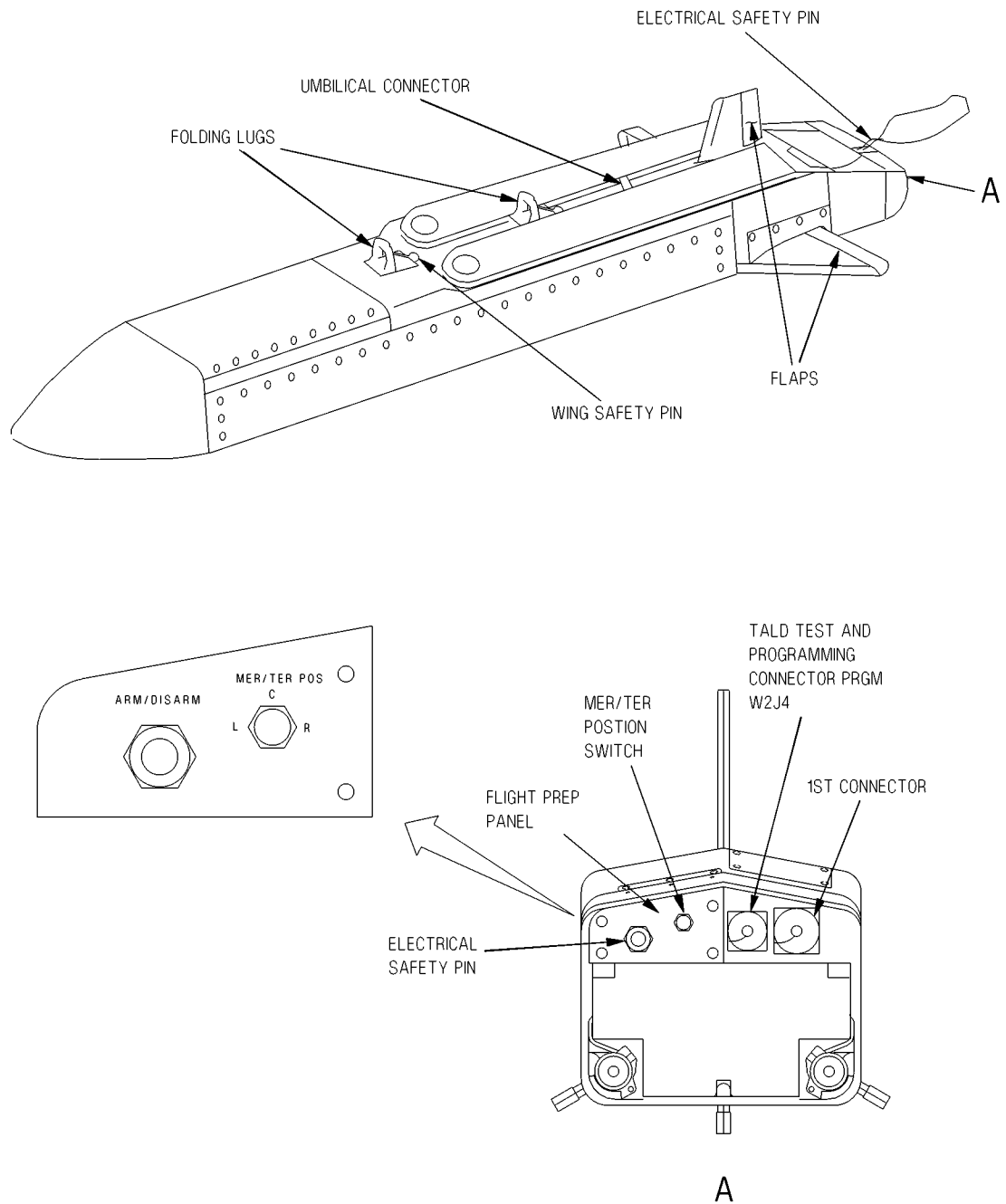
**CAUTION**

Any damage is cause for rejection.

- c. Inspect wings and flaps for dents, cracks and distortion
  - d. Inspect store surface for damage.
  - e. Inspect umbilical, clean and not damaged.
  - f. Ensure suspension lugs are erect (in detents).
  - g. On FLIGHT PREP panel, set MER/TER POS switch as applicable (L, C, R), for BRU-42 station to be loaded.
2. Inspect ITALD for loading as follows (Figure 25-2):
  - a. Ensure wing safing pin is installed and lanyard bridle is attached to safing pin.
  - b. Ensure engine inlet cover and safing pin installed.

**WARNING**

If electrical safing pin and separation switch pin is not properly installed, inadvertent firing of chaff or RF module may occur. The electrical safety pin is properly installed if the red stripe is not visible through access cover.



**Figure 25-1. TALD Inspection**

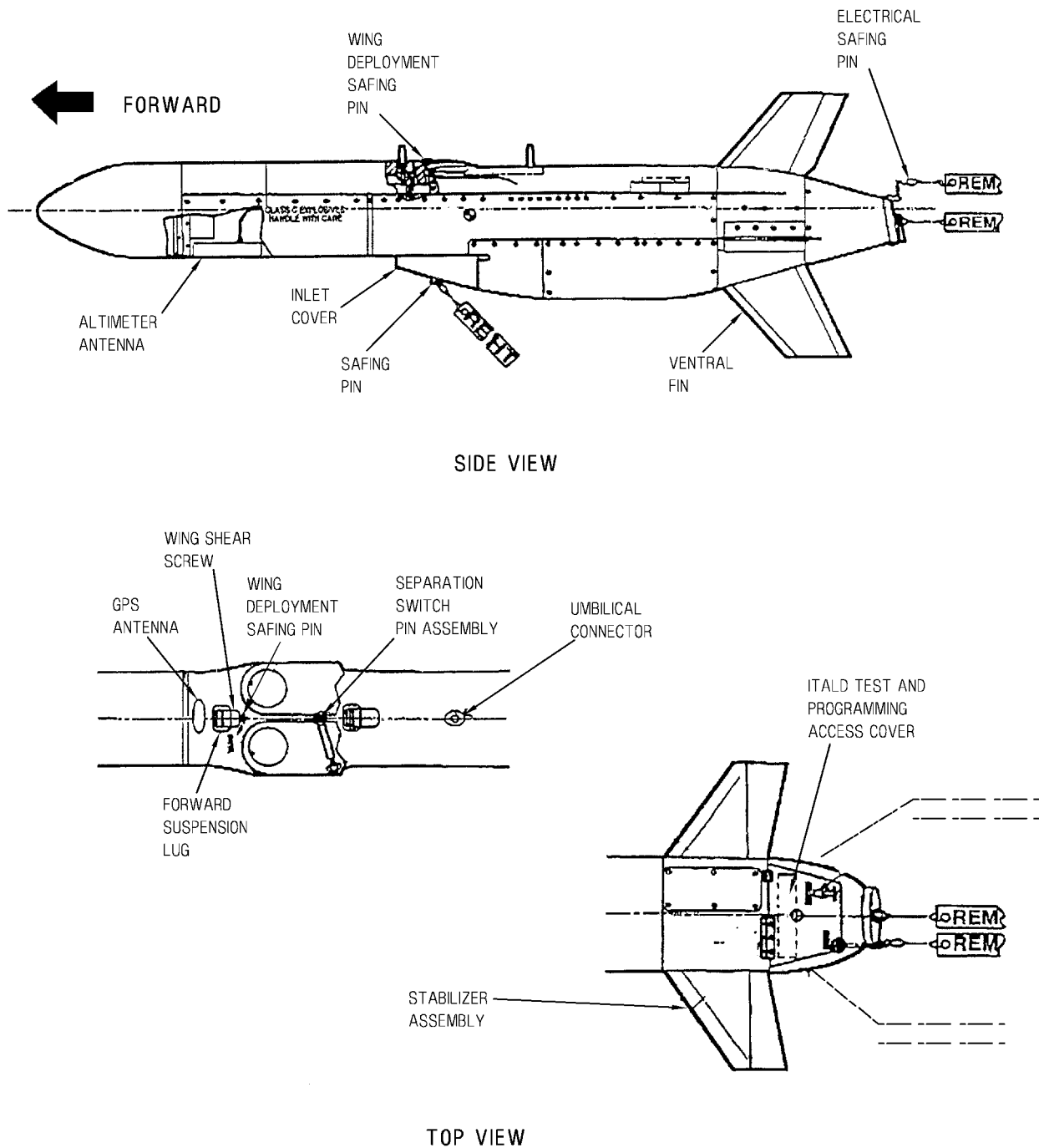


Figure 25-2. ITALD Inspection

- c. Verify electrical safing pin is installed and red stripe is not visible through access cover.

**CAUTION**

Any damage is cause for rejection.

- d. Inspect for missing, loose or damaged parts.
- e. Verify wings are retracted (folded), clean and not damaged.
- f. Verify vertical and horizontal stabilizers are secure, clean and not damaged.

**NOTE**

Fuel leakage is cause for rejection. Fuel leakage (JP-10) may be detected by blue residue. If fuel leakage is detected, notify proper authority.

- g. Verify no fuel leakage.
- h. Inspect umbilical cable, clean and not damaged.
- i. Ensure engine exhaust cover is installed.
- j. GPS antenna not damaged.
- k. Pressure ports, clean not damaged.
- l. Open flight prep access panel and ensure the following:
  - (1) MER/TER POS switch set as applicable (L,C,R) for BRU-42 station to be loaded.

**NOTE**

Mission profile may be verified, if required, by either checking the mission profile code on the flight preparation panel door or by using the (TALD) TTU-473/E Decoy Tester-Programmer "Verify" function or (TALD/ITALD) TTU-585/E Decoy Tester-Programmer "Verify" function.

- (2) Flight profile form data is correct for mission and flight programming has been performed.
- m. Secure flight prep access panel.
- n. Perform wing shear screw/deployment check as follows:

**CAUTION**

Stand clear of ITALD wing sweep area while performing wing shear screw/deployment check.

**NOTE**

Wing shear screw is located in the forward suspension lug well.

Wing shear screw is required to be torqued down to  $13 \pm 1$  inch pound of torque.

- (1) Ensure wing shear screw is screwed down.
- (2) Remove wing safing pin.

**NOTE**

If wing sweep exceeds five (5) inches of free play at wing tips, and no resistance is felt (contact with shear screw) close wing. Install wing safing pin and notify proper authority.

Reject weapon if wing sweep exceeds five (5) inches and wings are free to expand to open position.

- (3) Slowly move wings to ensure proper movement and free play of wings.
- (4) Position wings to retracted position and install wing safing pin.

**25-10. WEAPON LOADING.**

25-11. **BRU-42 PREPARATION.** Prepare BRU-42 for loading as follows:

1. Verify that aircraft preparation/inspection (Paragraph 25-6) and weapon inspection (Paragraph 25-8) have been completed.
2. (If applicable) Verify that power is removed from aircraft.
3. Verify that aircraft is grounded.

<b>CAUTION</b>
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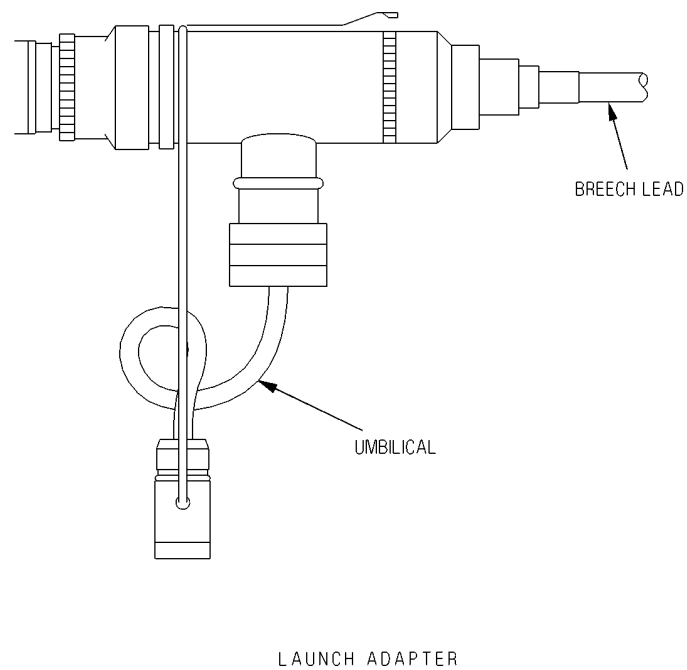
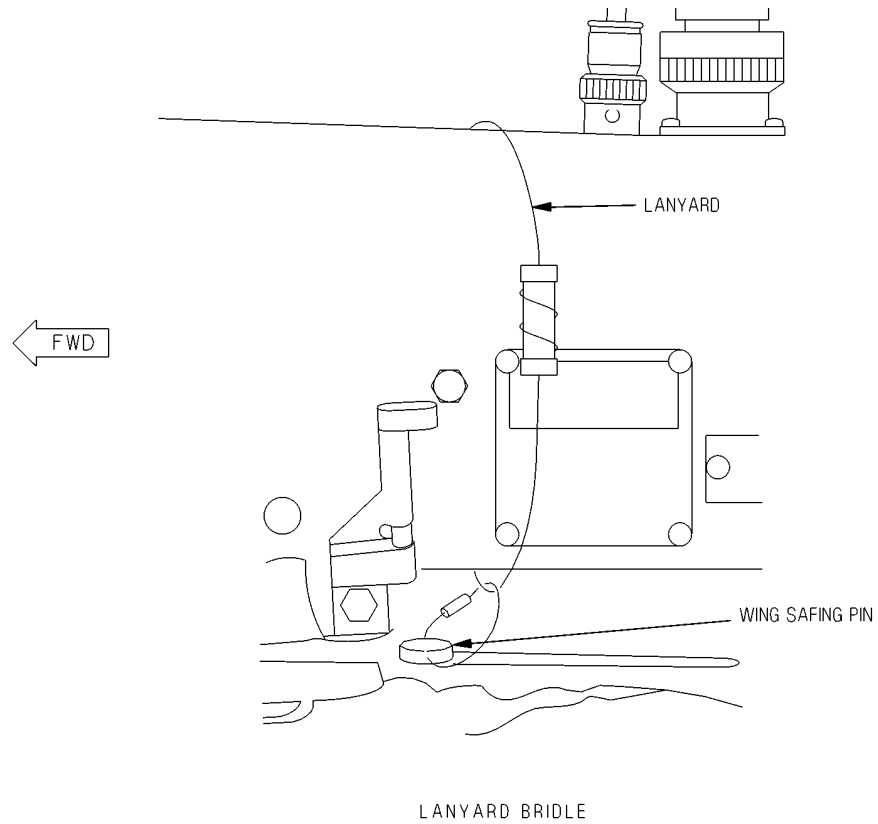
Cable assembly PN(s) 43-24000-102/-103/-104 require HERO to be set prior to installing CADS.

4. Ensure that launch adapters are not damaged and installed on each BRU-42 station to be loaded (Figure 25-3).
5. Position all armament switches in accordance with Table 5-1.
6. Position handling equipment with TALD/ITALD near station to be loaded and secure.

**NOTE**

Use of lug alignment plate is not mandatory, however, it's use will prevent damage to the GPS antenna if fwd lug falls forward.





**Figure 25-3. Lanyard Bridle and Launch Adapter Installation**

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**TALD/ITALD**

7. (If applicable) (ITALD) Install lug alignment plate.

8. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

25-12. **BRU-42 LOADING.** Load BRU-42 as follows:

**CAUTION**

Do not lift weapon by control surfaces (flaps), or allow swaybrace pads to contact wings.

(ITALD) Do not lift on or allow loading equipment to contact radome, radar altimeter antenna, engine inlet cover, exhaust cone, or allow shoulder swaybrace to contact wings.

(ITALD) Maintain weapon parallel to swaybraces to avoid damage to wings or fuselage.

1. Remove weapon tiedown straps securing weapon to handling equipment.
2. Raise weapon until both suspension lugs enter bomb rack suspension hooks and hooks latch.
3. Gently shake weapon to ensure TALD/ITALD is supported by the suspension hooks.
4. Position safety stop lever to LOCKED.
5. (If applicable) Remove lug alignment plate.

**CAUTION**

Free lateral movement in wing mechanism must be removed by spreading wings for proper swaybrace adjustment. Do not attempt to spread wings further after free movement has stopped.

Overtightening of rear swaybrace can damage wings.

6. (As applicable) Adjust BRU-42 centerline station swaybraces as follows:
  - a. Spread TALD/ITALD wings until free movement stops.
  - b. Adjust forward and aft swaybraces until pads contact weapon/wings.
  - c. Tighten forward and aft swaybraces 1/2 turn.
  - d. Ensure wings contact pads on weapon.
7. (As applicable) Adjust BRU-42 shoulder station swaybraces as follows:
  - a. Ensure weapon is resting against both forward and aft inboard swaybraces.
  - b. Spread TALD/ITALD wings until free movement stops.

- c. Adjust out board swaybraces until pads contact weapon/wings.
- d. Tighten forward and aft outboard swaybrace one full turn.
- 8. Position BRU-42 ejector foot.
- 9. Connect wing safing pin lanyard bridle to BRU-42 (Figure 25-3).
- 10. (ITALD) Connect separation switch pin lanyard to tail arming unit (Figure 25-2).
- 11. (Asymmetric Loads) Make final BRU-32 swaybrace adjustments as follows:
  - a. Push BRU-42 outboard until BRU-32 outboard swaybraces are seated on BRU-42.

**NOTE**

If drag is not present on bolt during swaybrace adjustment, tighten setscrew with 3/32 Allen wrench until drag is present. Do not overtighten setscrew.

- b. Using screwdriver, tighten inboard swaybraces until all four swaybraces are seated on BRU-42.
- 12. (As required) Perform Weapon Inventory/BIT check (Paragraph 5-39).

**WARNING**

HERO must be set prior to installing CAD's in BRU-42 if using launch adapters, PN(s) 43-24000-102/-103/-104.

- 13. (BRU-42) Install cartridges in all loaded stations.
- 14. Connect launch adapter to breech and tighten breech cap.
- 15. Connect launch adapter(s) to weapon.

**WARNING**

Do not install primary or auxiliary cartridges in BRU-32 with BRU-42/TALD/ITALD loaded.

- 16. (BRU-32) Install and tighten cartridge retainers and auxiliary cartridge cap on all loaded bomb racks.
- 17. Ensure that BRU-32 suspension hooks are open on unloaded stations.
- 18. Ensure that BRU-42 suspension hooks are open on unloaded BRU-42 stations.
- 19. Place WEAPON LOADED sign in cockpit.
- 20. Remove tools and handling equipment from area.

**25-13. POSTLOADING INSPECTION.**

25-14. Perform Postloading Inspection checks for TALD loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. BRU-32.

**WARNING**

Do not install primary or auxiliary cartridges in BRU-32 with BRU-42/TALD loaded.

- a. Swaybraces properly seated.
  - b. Cartridge retainers and auxiliary cartridge caps installed and tight.
  - c. Suspension hooks are open on unloaded stations.
5. BRU-42:
- a. Adapter cable installed.
  - b. Swaybraces adjusted.
  - c. Suspension hooks are open on unloaded stations.
  - d. Launch adapter installed and breech cap tight.
  - e. Safety stop levers in LOCKED position on loaded stations.
6. TALD:
- a. Verify launch adapter connected to weapon.
  - b. Wing safing pin lanyard bridle attached to bomb rack and through loop on pin.
  - c. MER/TER POS switch set as applicable for each loaded station.
  - d. Electrical safing pin installed and locked.
7. ITALD:
- a. Verify launch adapter connected to weapon.
  - b. Wing safing pin lanyard bridle attached to bomb rack and through loop on safing pin.

- c. Separation switch pin lanyard connected to tail arming unit.
  - d. Engine inlet cover and safing pin installed.
  - e. Engine exhaust cover installed.
  - f. MER/TER POS switch set as applicable for each loaded station.
  - g. Electrical safing pin installed and locked.
  - h. (If applicable) Lug alignment plate removed.
8. Verify proper code inputs inserted in Weapons Insertion Panel for weapons/fuzes on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
9. Tools and handling equipment removed from area.
10. Report status of aircraft to proper authority.

**25-15. PRIOR TO LAUNCH.**

25-16. Prior to Launch procedures are performed in the rearming area before engine turnup, and in the arming area. Perform Prior to Launch procedures as follows:

25-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

- 1. Remove/stow WEAPON LOADED sign.
- 2. (ITALD) Remove engine exhaust cover.
- 3. Secure access doors and panels.

25-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

**WARNING**

Aircrew must place both hands in full view at all times during arming.

- 1. Position safety person in view of aircrew.
- 2. Notify aircrew of intention to arm aircraft.
- 3. Remove inlet cover and safety pin.
- 4. Remove electrical safing pin.
- 5. Position BRU-42 safety stop levers to UNLOCKED.
- 6. Indicate to aircrew that aircraft is armed and personnel and equipment are clear.

25-19. **ARMING AREA.** There are no procedures to be performed for TALD in the arming area.

**25-20. AFTER LANDING OR GROUND ABORT.**

25-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

25-22. **SAFING.** After Landing or Ground Abort Safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

25-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for TALD in the dearming area before engine shutdown.

25-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

Do not remove launch adapter from weapon.

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. (If applicable) Position BRU-42 safety stop levers to LOCKED.
3. Install inlet cover and safety pin.
4. Install TALD/ITALD electrical safety pin(s).
5. (ITALD) Install engine exhaust cover.
6. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

7. (If applicable) Place WEAPON LOADED sign in cockpit.
8. Report status of aircraft to proper authority.

25-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 25-20).
2. For stations to be loaded or weapons and aircraft to be turned around, perform the following:
  - a. Perform Aircraft Preparation/Inspection (Paragraph 25-6).
  - b. Perform Weapon Inspection for TALD to be loaded (Paragraph 25-8).
  - c. Load weapons according to Weapon Loading procedures (Paragraph 25-10).

3. For aircraft recovered with loaded stations, perform the following:
  - a. Perform applicable portions of Aircraft Preparation/Inspection (Paragraph 25-6).
  - b. Perform Weapon Inspection (Paragraph 25-8).
4. Perform Postloading Inspection Check (Paragraph 25-13).
5. Perform Prior to Launch procedures (Paragraph 25-15).

## **25-26. WEAPON UNLOADING.**

25-27. **BRU-42 PREPARATION.** Prepare BRU-42 for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle/safety stop levers are in the LOCKED position on all loaded stations.
6. BRU-42:

### **WARNING**

Do not remove launch adapter umbilical from weapon.

- a. Disconnect breech cap from launcher adapter.
- b. Remove launch adapter from BRU-42 breech.
- c. Tape launch adapter to weapon.
- d. Remove cartridge.
- e. Disconnect wing safing pin lanyard bridle from rack.
- f. (ITALD) Disconnect separation switch pin lanyard from tail arming unit.

### **NOTE**

(ITALD) Use of lug alignment plate is not mandatory, however, its use will prevent damage to the GPS antenna if fwd lug falls forward.

**A1-F18AE-LWS-000**  
**TALD/ITALD**

g. (ITALD) (If applicable) Install lug alignment plate.

h. Retract swaybraces/ejector foot.

7. Position handling equipment near station to be unloaded.

25-28. **BRU-42 UNLOADING.** Unload BRU-42 as follows:

<b>CAUTION</b>
----------------

Do not lift on control surfaces (flaps) or allow swaybrace pads to contact wings.

(ITALD) Do not lift on or allow loading equipment to contact radome, radar altimeter antenna, engine inlet cover, exhaust cone, or allow shoulder swaybrace to contact wings.

(ITALD) Maintain weapon parallel to swaybraces to avoid damage to wings or fuselage.

1. Manually support TALD/ITALD and position BRU-42 safety stop lever to UNLOCKED.
2. Pull manual release lever to open suspension hooks.
3. Remove TALD/ITALD and place on handling equipment.
4. Reinstall and tighten BRU-42 breech caps.
5. (ITALD) (If applicable) Remove lug alignment plate.
6. Set proper code input in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
7. Secure access doors and panels.
8. (If applicable) Remove/stow WEAPON LOADED sign.
9. Remove weapons and handling equipment from area.



## SECTION XXVI GUNS

### 26-1. INTRODUCTION.

26-2. This section contains loading and unloading information for the gun listed below. Procedures in this section are based on the premise that the aircraft is properly configured for gun loading. Gun loading and unloading can be performed simultaneously. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

#### NOTE

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

M61A1/M61A2 Aircraft Gun

### 26-3. ARMAMENT SUPPORT EQUIPMENT (ASE).

26-4. ASE authorized for loading the M61 gun is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

26-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific load being performed are mandatory for use and include:

1. (If applicable) Multipurpose power pack.
2. (If applicable) Battery and motor power unit (ammunition loading).
3. Handcrank.

### 26-6. AIRCRAFT PREPARATION/INSPECTION.

26-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Verify gun electrical safety switch is extended (Figure 26-1).

#### WARNING

If system is jammed refer to A1-F18AE-GJC-100 Gun Jam Clearing checklist.

#### NOTE

Gun loading/unloading may be performed simultaneously.

2. Open access door 6 and pull manual clearing handle to cleared position; inspect gun and ammunition handling system for damage and security of components (Figure 26-1).

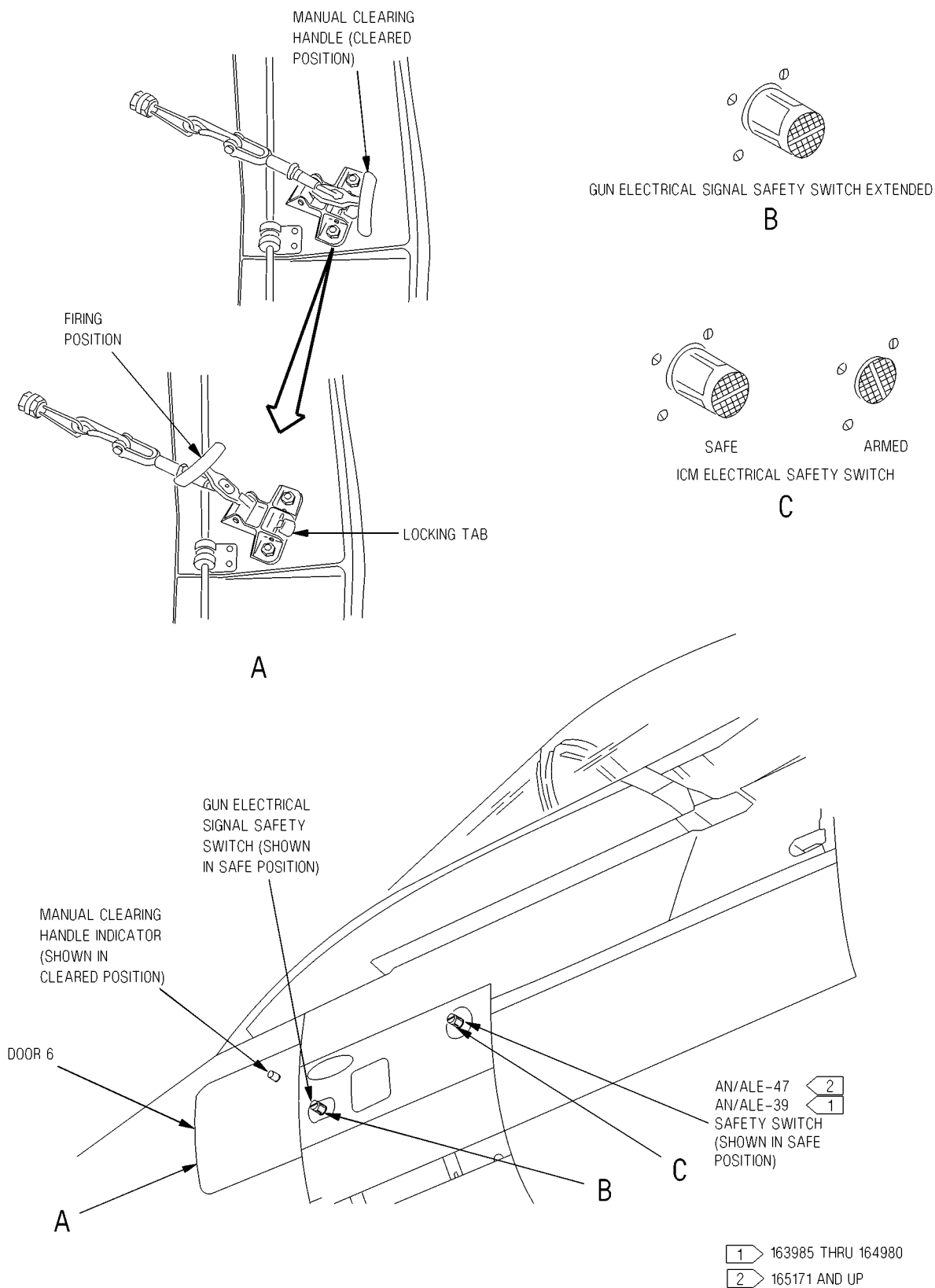


Figure 26-1. Gun Safing

## **26-8. WEAPON INSPECTION.**

26-9. Reject Linkless Ammunition Loading System (LALS) and notify proper authority, if inspection reveals that LALS is not acceptable for loading. Inspect MHU-130 Conveyor System/MHU-131 Loader Ammunition Transporter or GFK-21/E32K-7 LALS for the following:

1. (MHU-130/131) Inspect for the following:
  - a. Verify transporter and conveyor are not damaged.
  - b. Verify transporter marked to indicate type of rounds and quantity loaded.
  - c. Verify ammunition transporter drum exit and entrance unit access covers and timing pins are installed (Figure 26-2).
  - d. Verify entrance/exit unit timing pins are installed (Figure 26-3).
2. (GFK-21/E32K-7) Inspect for the following:
  - a. Verify the support frame assembly and exterior are not damaged.
  - b. Verify type of rounds and quantity loaded are marked on exterior.
  - c. Verify the work platforms and struts are not damaged (Figure 26-4).
  - d. Verify the multiple door assembly is not damaged (Figure 26-5).
  - e. Verify the conveyor and Aircraft Interface Unit (AIU) are not damaged (Figure 26-6).

## **26-10. WEAPON LOADING.**

26-11. **M61 GUN/LALS PREPARATION.** Prepare M61 Gun/LALS for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 26-6) and Weapon Inspection (Paragraph 26-8) have been completed.
2. Verify that aircraft is grounded.
3. Prepare M61 Gun for loading as follows:
  - a. Lower loading tray and inspect attached lugs for cracks.
  - b. Pull hydraulic manual control to release residual hydraulic pressure.
  - c. Install handcrank on drive socket of transfer unit.

### **WARNING**

Do not attempt to rotate gun system by hand or power pack if aircraft hydraulic system is pressurized.

Do not rotate or operate gun system without ensuring that manual clearing handle is in clear position.

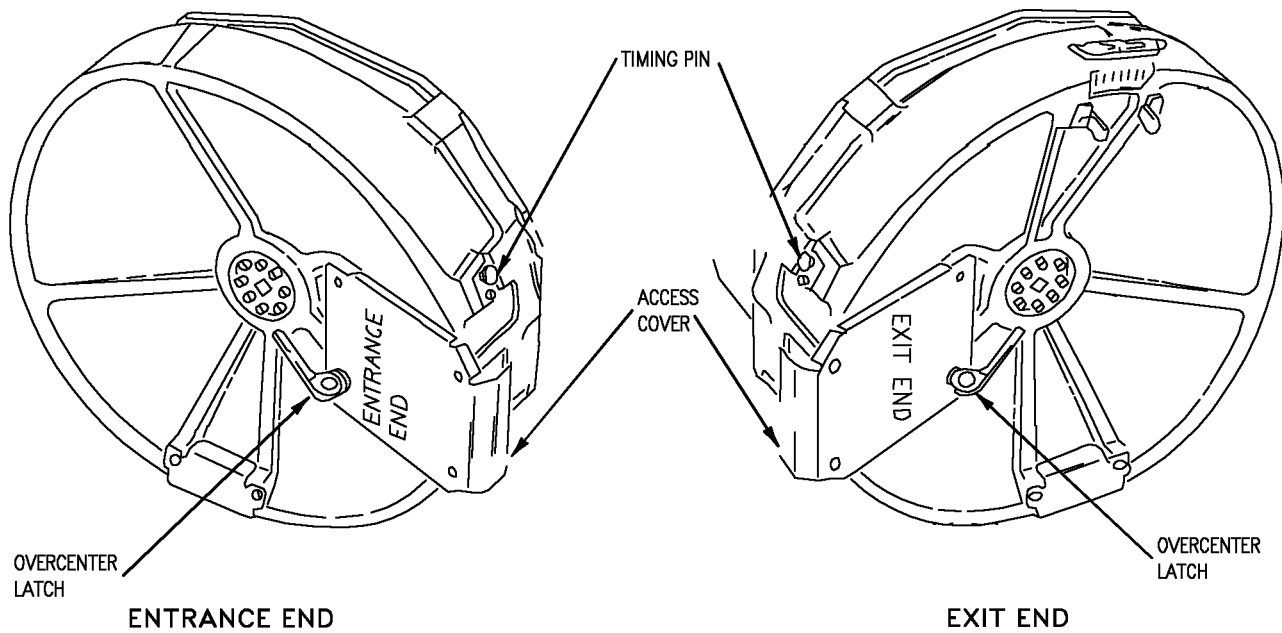


Figure 26-2. MHU-131 Ammunition Transporter Drum

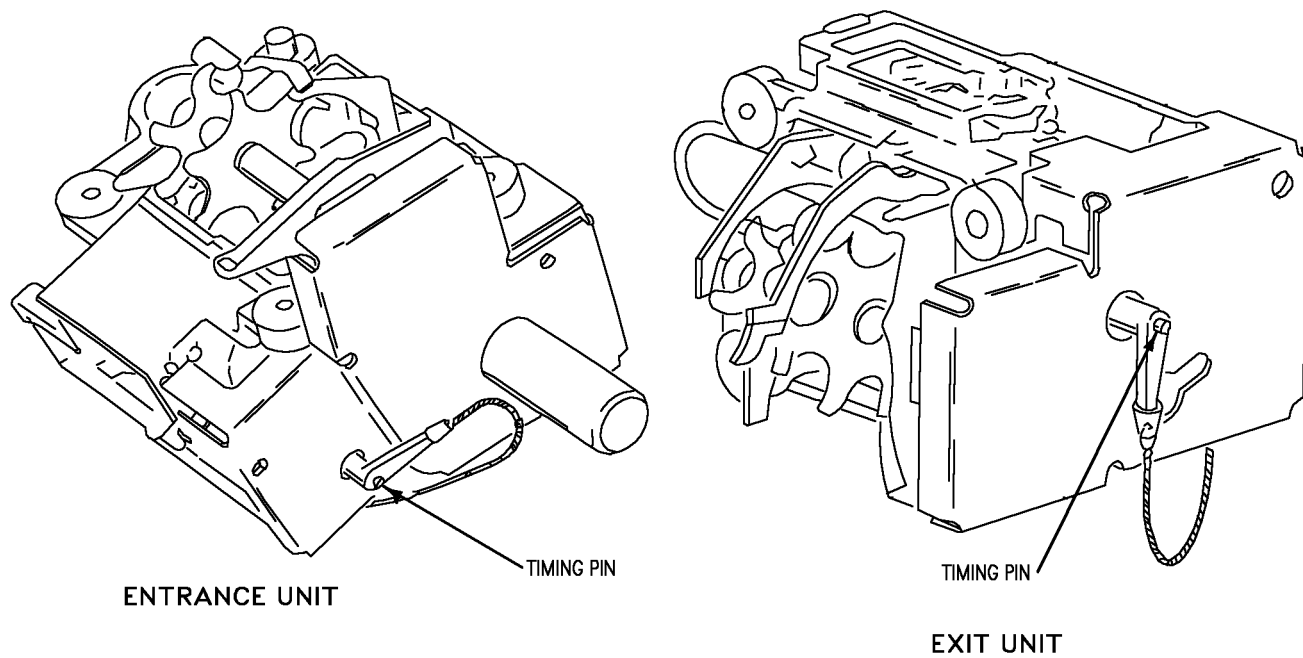
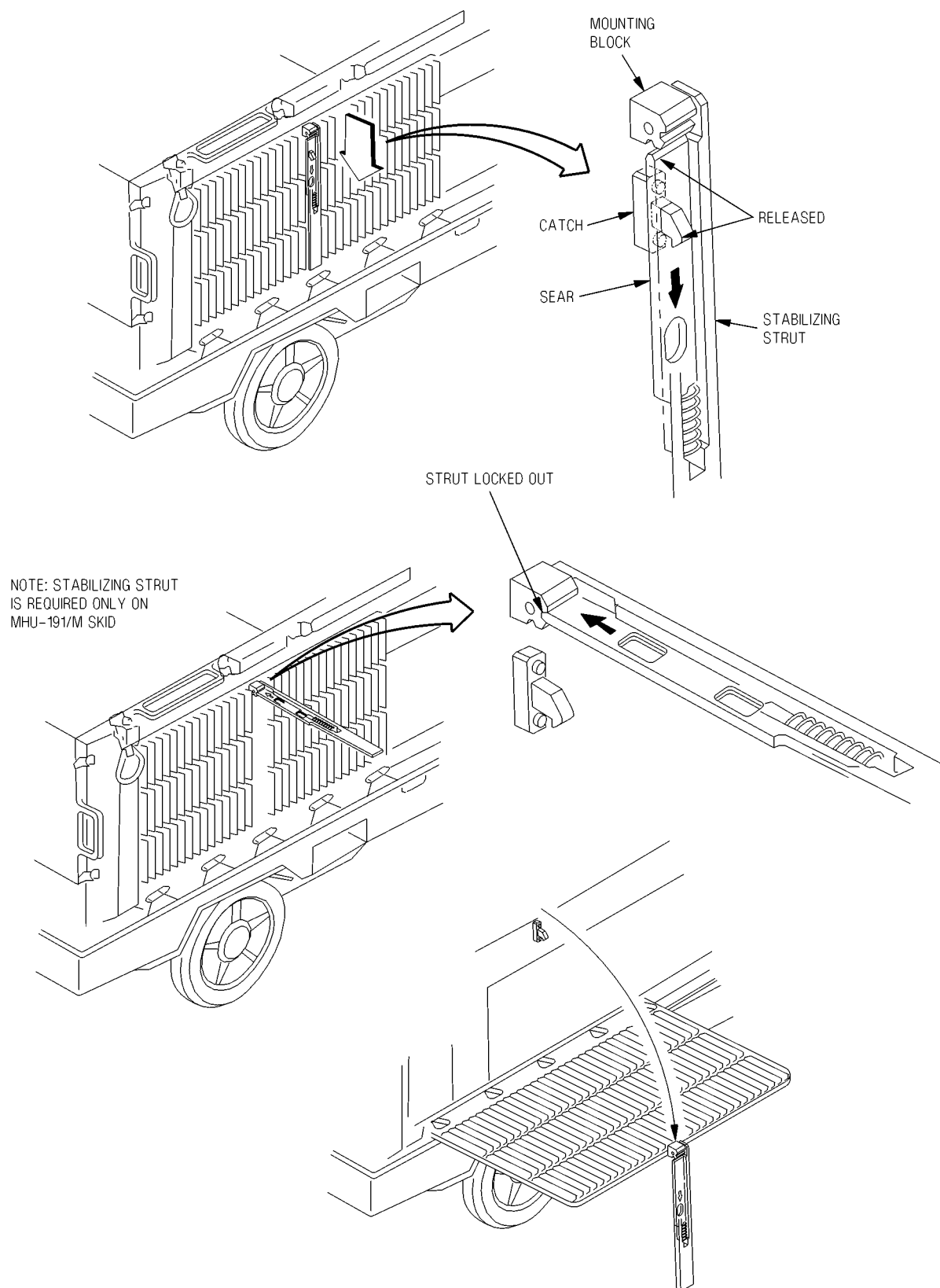
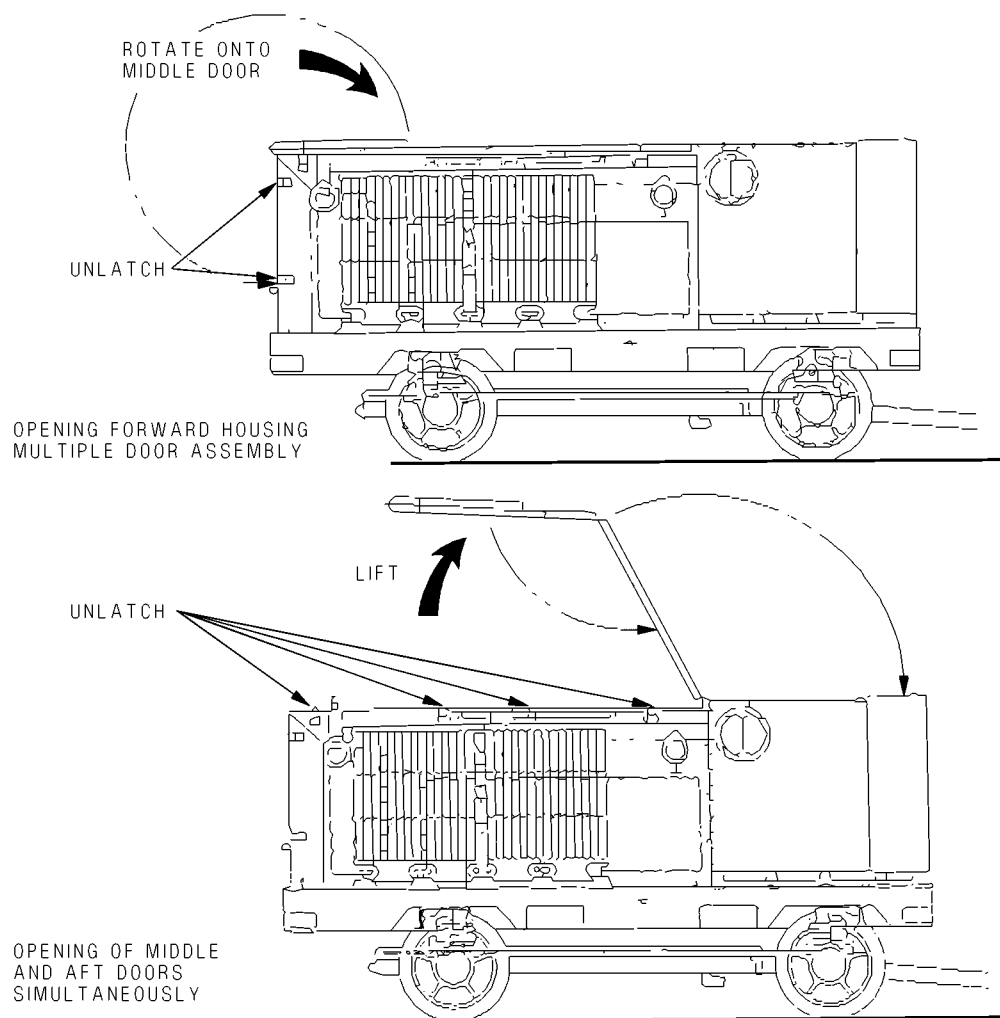


Figure 26-3. MHU-130 Entrance/Exit Unit Timing Pins



**Figure 26-4. GFK-21/E32K-7 Work Platforms and Struts**



**Figure 26-5. GFK-21/E32K-7 Multiple Door Assembly**

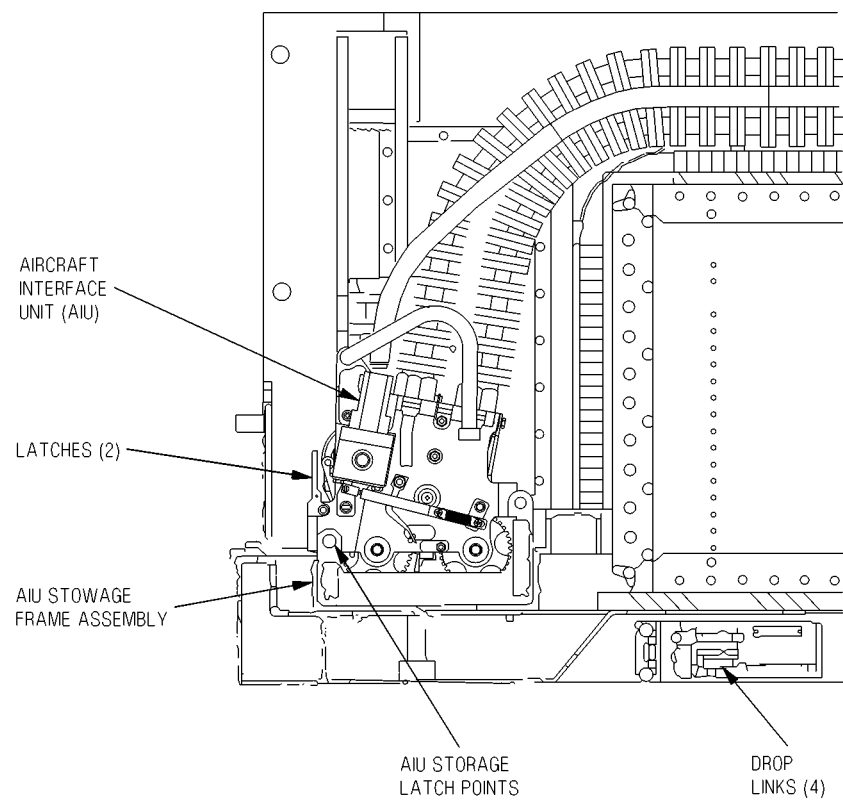


Figure 26-6. GFK-21/E32K-7 Conveyor and AIU

**CAUTION**

Handcrank must be rotated clockwise. Reverse rotation of the gun system can cause damage to the system and shall not be attempted.

- d. Rotate handcrank clockwise until 12 elements/rounds cycle through transfer unit.

**CAUTION**

Anti-jam pin must be pulled and locked when simultaneously loading and unloading gun.

- e. (If applicable) Pull and lock anti-jam pin (Figure 26-7).

**CAUTION**

Damage to timing pin may occur if excessive force is used while rotating gun to the timed position.

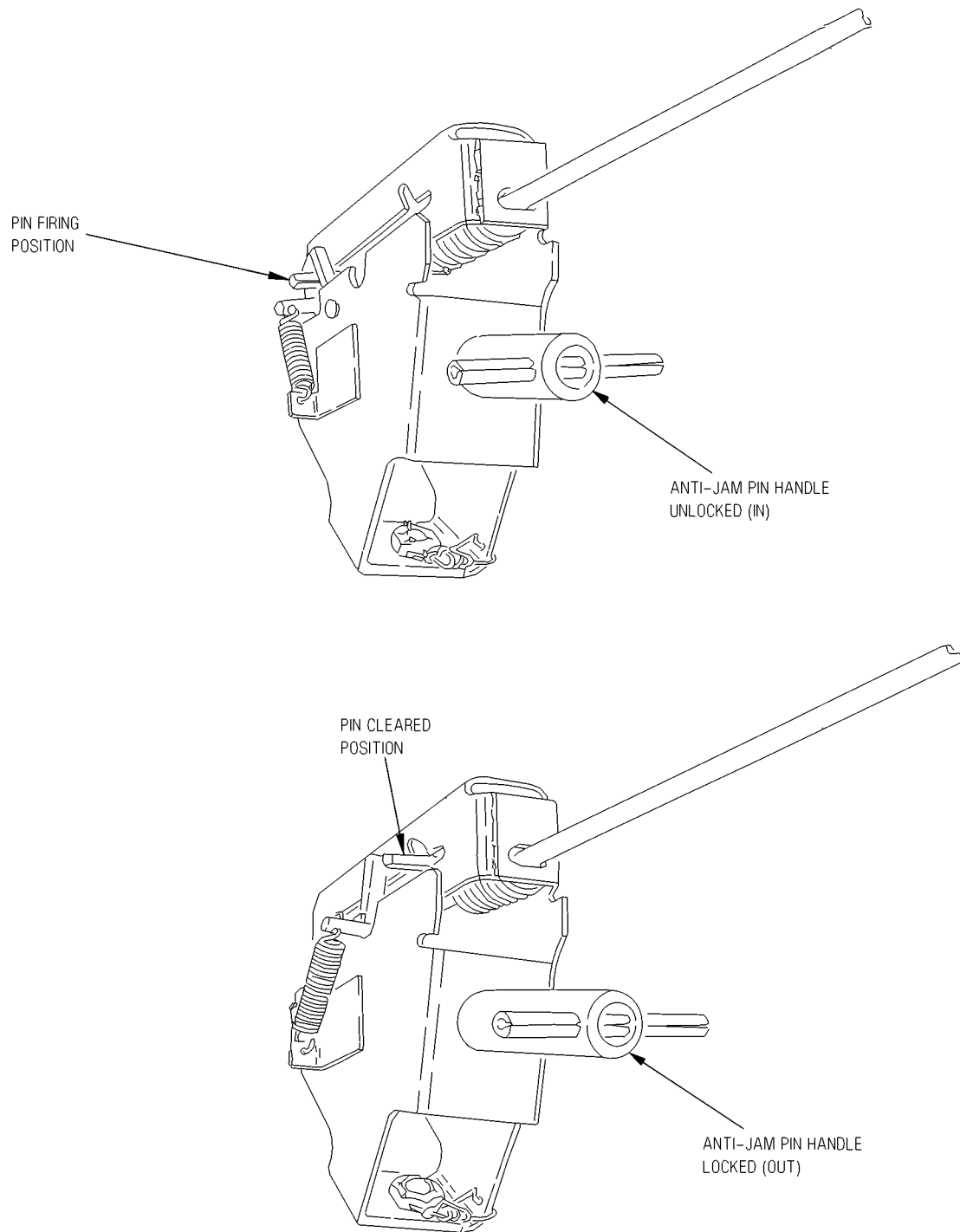
- f. Press and hold timing pin and slowly rotate gun to timed position (Figure 26-8).

**NOTE**

Maintain pressure on timing pin while removing handcrank.

- g. Remove handcrank.
  - h. Release timing pin and verify pin retracts and timing gear does not move.
4. Prepare MHU-130/131 LALS for loading as follows:
- a. (If applicable) Install Conveyor Assembly as follows:
    - (1) Position conveyor over studs on transporter frame with casters over exit end of transporter.
    - (2) Push conveyor aft until fully seated.
    - (3) Install quick disconnect pin (Figure 26-9).
  - b. Remove entrance and exit unit dust covers and stow covers.
  - c. Time transporter entrance end with drum entrance cover timing pin and hold drum timing pin in (Figure 26-2).
  - d. Entrance unit installation:
    - (1) Remove entrance unit from stowed position.
    - (2) Remove timing pin, pull on entrance unit until chutes are fully extended. Reinstall timing pin (Figure 26-3).





**Figure 26-7. Anti-Jam Pin**

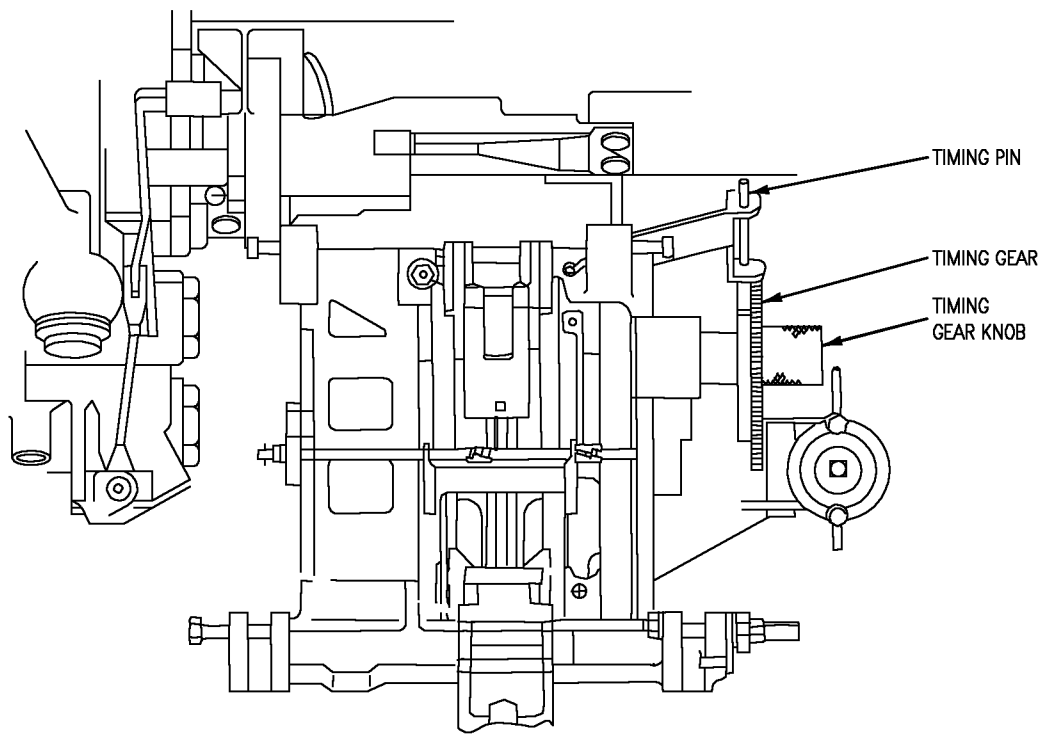


Figure 26-8. Gun Timing Pin

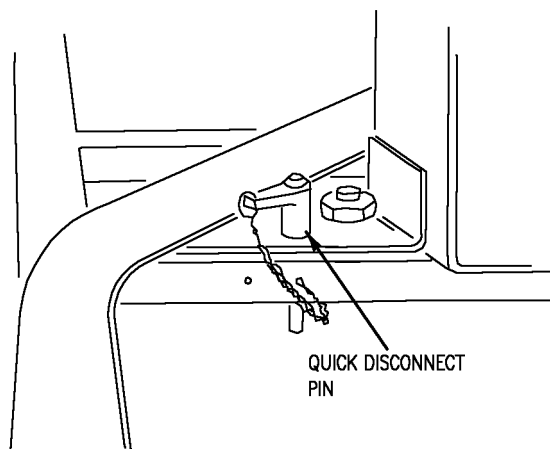


Figure 26-9. MHU-130/131 Conveyor Quick Disconnect Pin Installation

- (3) Hold drum cover timing pin in and place entrance unit in position on the mounting lugs and hold tight against drum cover.
- (4) Remove timing pin from entrance unit and insert into upper right mounting lug.

<b>CAUTION</b>
----------------

If movement exists between entrance unit and drum cover after over-center latch is actuated, reject conveyor.

- (5) Actuate over-center latch, ensure no movement exists.
  - (6) Release and pull out drum entrance cover timing pin.
- e. Position element bypass chute directly under return chute.
  - f. Time transporter exit end with drum exit cover timing pin and hold pin in (Figure 26-2).
  - g. Exit unit installation:
    - (1) Remove exit unit from stowed position and remove timing pin (Figure 26-3).

**NOTE**

Proceed to step (3) for installation of exit units without a socket wrench opening.

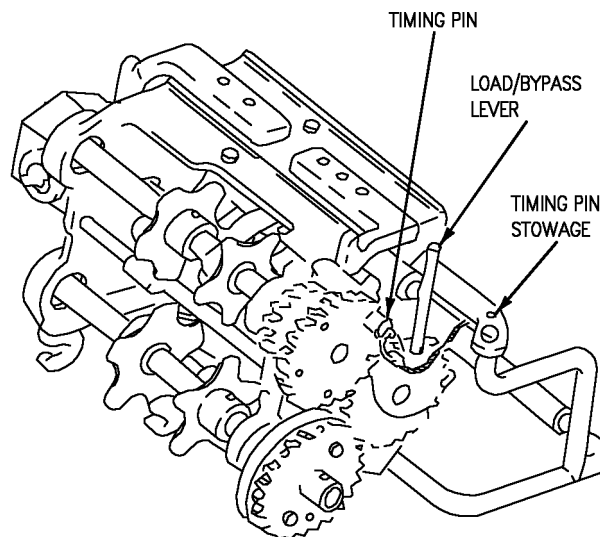
- (2) Exit unit with socket wrench opening:
  - (a) Position exit unit so that it rests on mounting lugs with the drive gears not engaged.
  - (b) Insert 3/4-inch socket with drive handle in socket opening.
  - (c) Rotate handle clockwise to force elements into feed chute, removing slack from bypass chute.
  - (d) Install timing pin.
- (3) Exit unit without socket wrench opening:
  - (a) Position exit unit 4 to 6 inches away from and in line with exit opening in drum.
  - (b) Rotate unload sprocket to force elements into feed chute until all slack has been removed from the elements in the bypass chute.
  - (c) When the bypass chute element tension is adjusted, lift the exit unit, being sure to rotate the unit in the forward direction and install timing pin.
- (4) Hold drum cover timing pin in and place exit unit in position on the mounting lugs and hold tight against drum cover.

- (5) Remove timing pin and insert it into the upper left mounting lug.

<b>CAUTION</b>
----------------

If movement exists between exit unit and drum after over-center latch is actuated, reject conveyor.

- (6) Actuate over-center latch and ensure no movement exists.
- (7) Check element tension in fixed bypass chute. There should be a maximum of 3/8 inch fore and aft play. If play exceeds 3/8 inch repeat steps (2) or (3), as applicable.
- (8) Release and pull out drum exit cover timing pin.
  - h. Remove any remaining slack in bypass chute by pulling element chute out from under return chute at entrance end of drum.
  - i. Remove drum drive flexible shaft from stowed position and connect to drum exit cover using lower pin only.
  - j. Remove interface unit timing pin, then remove unit from stowed position (Figure 26-10).
  - k. Check position of LOAD/BYPASS lever; if not in bypass, shift lever to BYPASS. Check position of cam springs and center gate; if not in BYPASS, rotate drum with handle in entrance unit until gate rotates to BYPASS position.
  - l. Cycle system to ensure that conveyor is not jammed.



**INVERTED VIEW**

**Figure 26-10. Interface Unit**

- m. Extend interface unit to maximum distance away from exit end of drum. Check that the return chute is fully extended. Time interface unit (Figure 26-10).
  - n. Stow interface unit assembly.
5. Prepare GFK-21/E32K-7 LALS for loading as follows:
- a. Position loader near aircraft.
  - b. Unlatch forward housing multiple door assembly latches.
  - c. Fold the doors up, back and open (Figure 26-5).
  - d. Remove the retaining strap from stowed position and place over forward multiple door and snap to aft housing (Figure 26-11).
  - e. Release and remove Aircraft Interface Unit (AIU) from stowage position.
  - f. Ensure AIU shift lever is in BYPASS position (Figure 26-12).
  - g. Depress AIU declutch button and extend conveyor assembly to its fullest length.
  - h. Release declutch button.

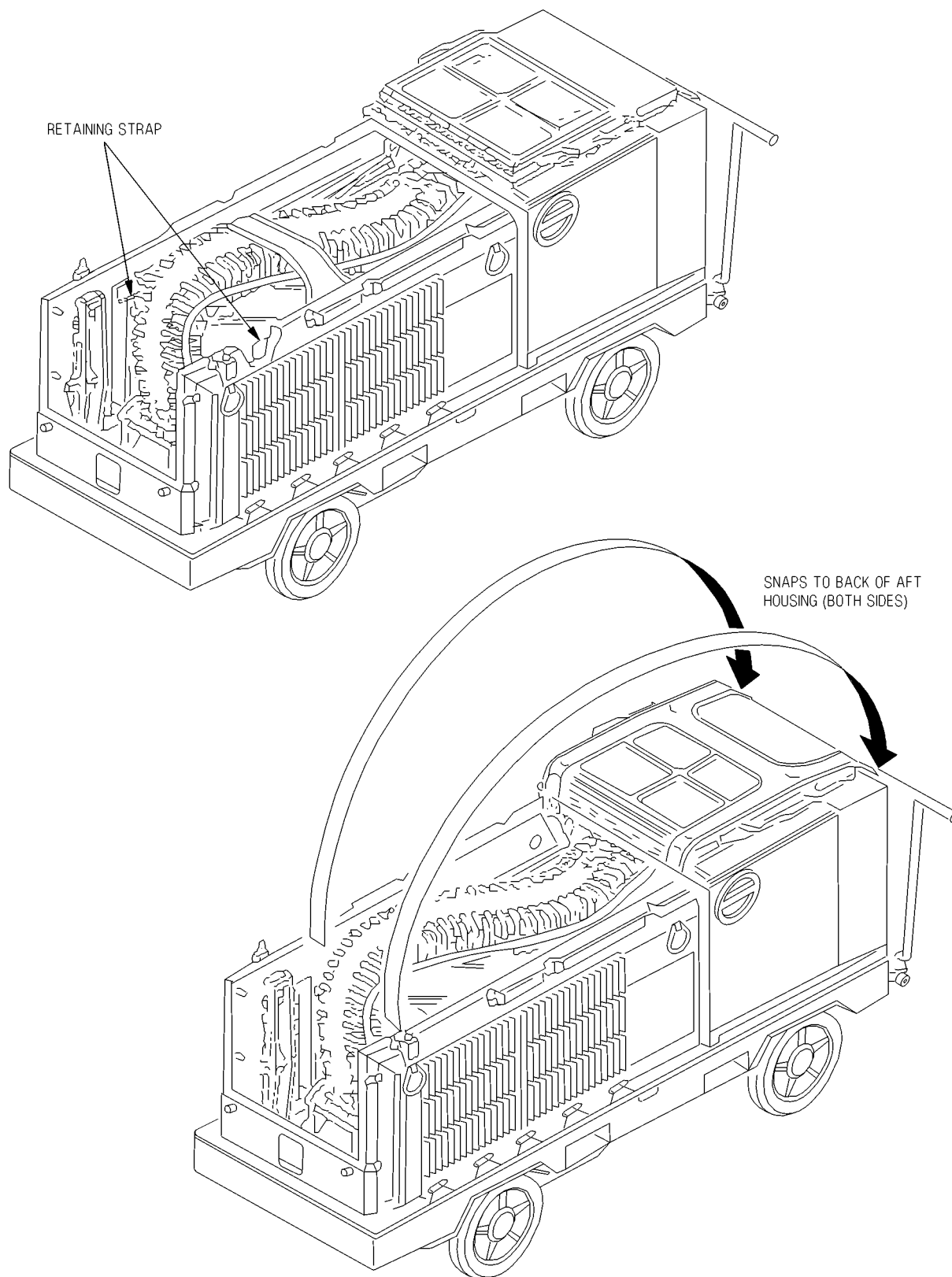
#### **NOTE**

Proper operation of the unit depends on correct timing. It is necessary that the AIU be timed before installation. Proper timing of the AIU is indicated when the white timing mark on the load gear is in view through the timing hole in the gear cover (Figure 26-12).

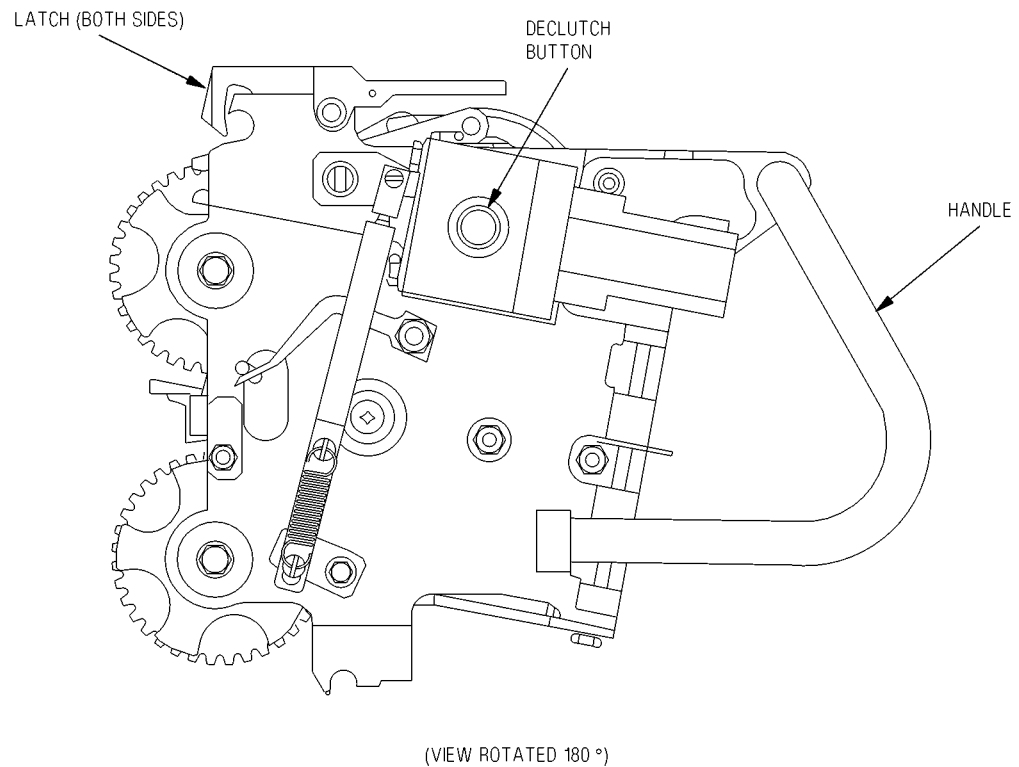
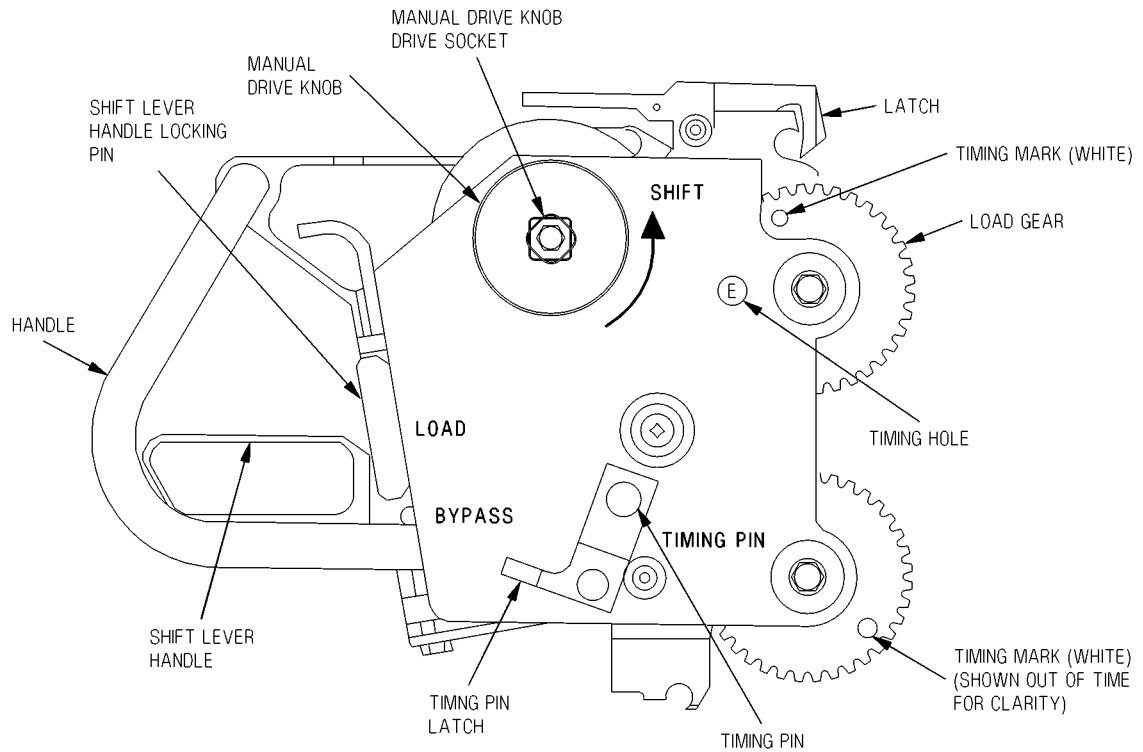
- i. Time the AIU by rotating (either direction) the manual drive knob on the right side of the AIU to align the timing holes (Figure 26-12).
- j. Press timing pin to the LOCKED position (Figure 26-12).
- k. Stow AIU.

26-12. **M61 GUN LOADING.** Load gun as follows:

- 1. Position LALS for loading.
- 2. On transfer unit, unlock and lower gate to open position. Ensure gate extends below loading tray (Figure 26-13). Press, turn and lock upper latching pins to the proper position, IN for the MHU-130/131 and IN or OUT for the GFK-21/E32K-7.
- 3. Verify gun is in timed position (Figure 26-8).
- 4. Remove interface unit from stowed position and ensure that unit is timed and in BYPASS position.



**Figure 26-11. GFK-21/E32K-7 Retaining Straps**



**Figure 26-12. GFK-21/E32K-7 Aircraft Interface Unit**

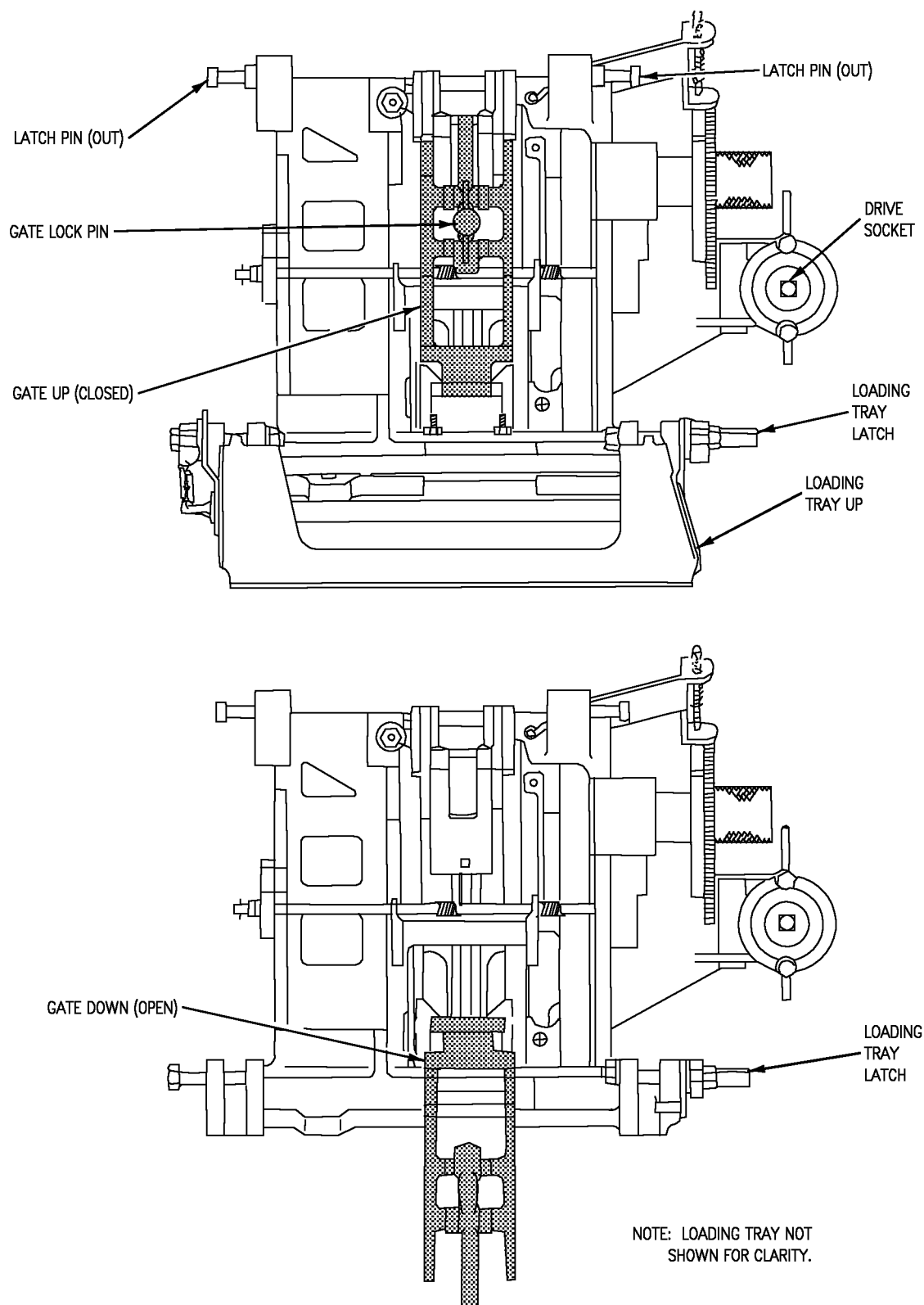


Figure 26-13. Transfer Unit



5. (MHU-130/131 LALS) Proceed as follows:

**NOTE**

If interface unit cannot be fully rotated up to allow release of the latch pins, rotation of timing gear knob may be required.

- a. Install interface unit by positioning the lower lugs over the roll pins on the transfer unit. Press loading tray latch and rotate interface unit upward and release upper latching pins to the OUT position (Figure 26-13). Ensure latching pins fully extended.
- b. Remove and stow interface unit timing pin (Figure 26-10).
- c. Position LALS to adjust tension on chutes.
- d. (If applicable) Insert handcrank in entrance unit assembly, turn clockwise until all slack has been removed from the elements in the return chute.
- e. (If applicable) Secure drum drive flexible shaft to transporter exit cover with upper pin.

6. (GFK-21/E32K-7 LALS) Proceed as follows:

**WARNING**

When LALS unit is mounted on MHU-191/M transporter, the work platform stabilizing struts must be deployed for aircraft servicing.

- a. (As required) Release stabilizing struts and lower work platforms (Figure 26-4).

**NOTE**

Latch pins on aircraft transfer unit/adaptor must be in the unlocked position.

When AIU is connected to the gun system, the loader is grounded.

If the drive gear of the AIU does not mesh properly with the gears of the gun transfer unit, rotate the manual drive knob slightly in the SHIFT direction (while BOTH the AIU and AGFS timing pins are still engaged) to facilitate gear engagement.

- b. Connect AIU by positioning lower lugs over lower latch pins on aircraft transfer unit/adaptor and rotate AIU upward until upper latches lock.
- c. Release AIU timing pin.
- d. Press and hold AIU declutch button (Figure 26-12).

**CAUTION**

Do not over-tension chute. Adjust tension so that conveyor elements are fully extended but not overly tight. Slight element play of up to 1/16 inch is acceptable. Over tensioning of conveyor elements can lead to premature chute failure.

- e. Reposition loader to apply tension to conveyor assembly. Release declutch button.
  - f. Cycle ammunition loader while AIU is still in BYPASS position to ensure proper tensioning of conveyor assembly.
  - g. (As applicable) Set Aircraft Gun Feed System (AGFS) counter to 0000.
- 10. Shift interface unit LOAD/BYPASS lever to LOAD (Figure 26-10).
  - 11. Set interface unit counter to 0000.

**NOTE**

(GFK-21/E32K-7) Shift cycle should occur within one revolution of handcrank.

**WARNING**

Do not attempt to rotate gun system by hand or power pack if aircraft hydraulic system is pressurized.

Do not rotate or operate gun system without ensuring that manual clearing handle is in clear position.

**CAUTION**

Handcrank must be rotated clockwise. Reverse rotation of the gun system can cause damage to the system and shall not be attempted.

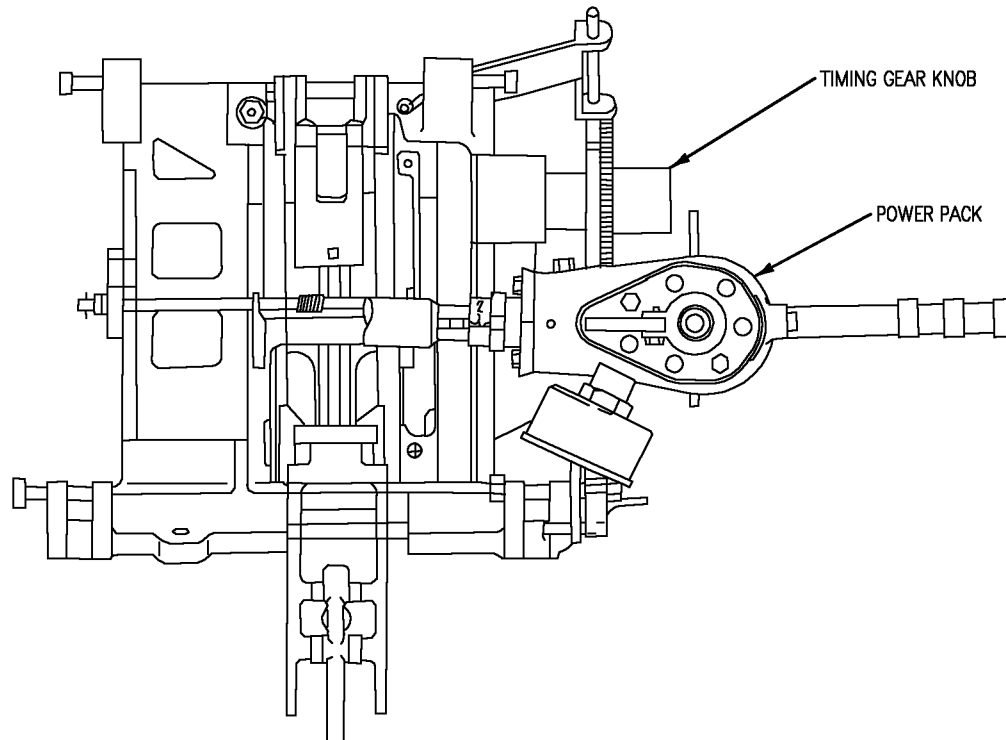
Handcrank only must be used for GFK-21/E32K-7 until rounds enter AGFS. After rounds enter the gun feed system, either handcrank or pneumatic drive tool may be used.

- 12. (If applicable) Manually cycle system until shifting gate shifts to LOAD.

**WARNING**

If gun system jams during loading or downloading, refer to A1-F18AE-GJC-100 Gun Jam Clearing checklist.

- 13. MHU-130/131 Power Pack Loading (Figure 26-14).
  - a. Insert power pack in transfer unit drive socket.
  - b. Cycle system until empty brass and cleared rounds are unloaded (simultaneous unloading) and/or desired quantity of rounds are loaded as indicated by interface unit counter.

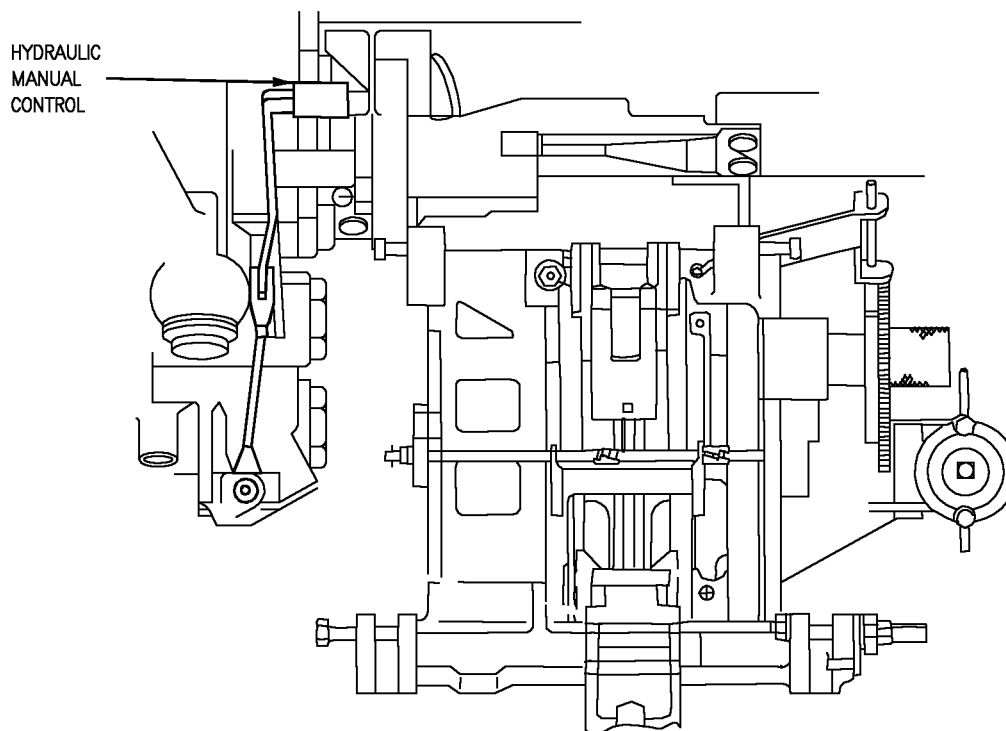


**Figure 26-14. Power Pack Installation**

<b>CAUTION</b>
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Only qualified personnel shall operate APU. Refer to A1-F18AC-LMM-000 for APU operating procedures.

14. (If applicable) APU Loading.
  - a. Verify right AMAD decoupled.
  - b. Start APU.
  - c. Slowly pull hydraulic manual control (Figure 26-15).
  - d. Release hydraulic manual control when empty brass and cleared rounds are unloaded (simultaneous unloading) and/or desired quantity of rounds are loaded as indicated by interface unit counter.
15. (GFK-21/E32K-7) Load as follows:
  - a. Using handcrank or pneumatic drive tool, cycle system until desired quantity of ammunition is loaded and, if applicable, spent cases and unfired rounds are removed from the system.
  - b. (If applicable) Remove pneumatic tool.
16. Shift LOAD/BYPASS lever to BYPASS.



**Figure 26-15. Hydraulic Manual Control**

17. Cycle system slowly until system goes into BYPASS.
18. (MHU-130/131) Continue cycling system and install interface unit timing pin.
19. Reposition LALS to enable removal of interface unit.

**WARNING**

When removing interface unit, rounds may fall from exposed transfer unit.

20. (MHU-130/131) Press and turn upper transfer unit latching pins to IN position.
21. Rotate interface unit down and lift free of lower transfer unit roll pins.
22. (GFK-21/E32K-7) Proceed as follows:
  - a. Disconnect AIU from gun system by depressing upper latches, rotating downward and lifting free from lower latch pins on transfer unit.
  - b. Ensure AIU is timed.

**CAUTION**

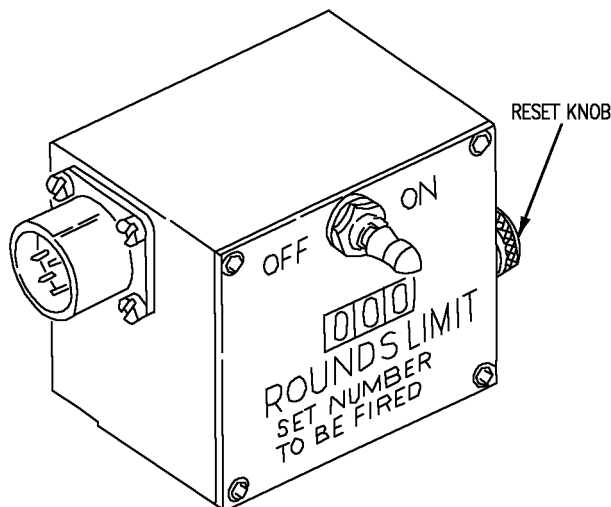
Ensure shift lever handle is in BYPASS position prior to AIU stowage.

23. Remove and stow interface unit/AIU.
24. Raise gate and lock.
25. Raise and lock loading tray.
26. Cycle system until first rounds appear in feed chute at transfer unit entrance.
27. (If applicable) Shutdown APU.
28. Recouple right AMAD.
29. Set rounds limiter as required (Figure 26-16).
30. (If applicable) Connect gun electrical cannon plug.
31. Verify that manual clearing handle in cleared position (Figure 26-1).
32. (If applicable) Position anti-jam pin to unlocked position.

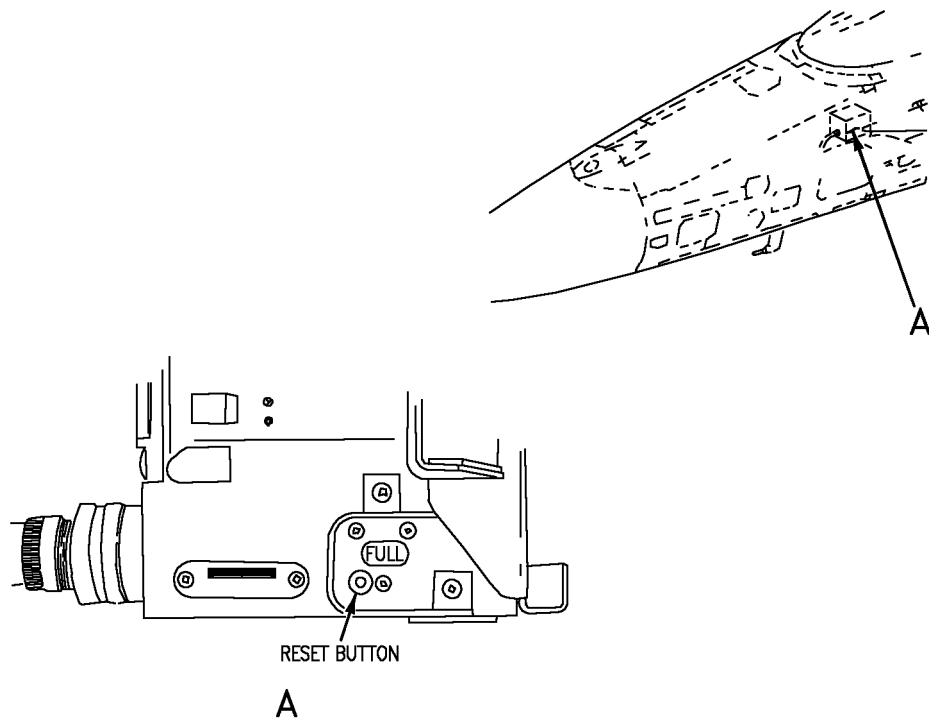
**NOTE**

Resetting of encoder-decoder is required when aircraft has been loaded.

33. (If applicable) Reset encoder-decoder (Figure 26-17).



**Figure 26-16. Rounds Limiter Switch**



**Figure 26-17. Gun Encoder-Decoder**

34. (If applicable) Secure access door.
35. Place WEAPON LOADED sign in cockpit.
36. (GFK-21/E32K-7) Proceed as follows:
  - a. Stow and lock struts and work platforms.
  - b. Unsnap restraining strap from aft housing.
  - c. Fold retaining strap over conveyor chute assembly and snap to forward housing.
  - d. Fold forward housing multiple door assembly forward and down to closed position.
  - e. Secure 12 forward housing multiple door assembly latches in pairs.
37. Remove tools and handling/loading equipment from area.

### **26-13. POSTLOADING INSPECTION.**

26-14. Perform Postloading Inspection by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.

3. Gun electrical safety switch extended.
4. Manual clearing handle in cleared position (Figure 26-1).
5. Anti-jam pin in unlocked position.
6. Gate and loading tray are raised and locked.
7. (If applicable) Rounds limiter set.
8. (If applicable) Encoder-decoder reset.
9. Gun electrical cannon plug connected.
10. Close access door 6, manual clearing handle indicator extended (Figure 26-1).
11. Tools and handling/loading equipment removed from area.
12. Report status of aircraft to proper authority.

**26-15. PRIOR TO LAUNCH.**

26-16. Prior to Launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform Prior to Launch procedures as follows.

26-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Open access door 6 and ensure anti-jam pin in unlocked position.
3. Position manual clearing handle to firing position by pressing lock tab (Figure 26-1).
4. Secure access door 6, manual clearing handle indicator flush with door.

26-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for the aircraft gun in the rearming area.

26-19. **ARMING AREA.** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during arming.

1. Position safety person in view of aircrew.
2. Notify aircrew of intention to arm aircraft.

**Guns**

3. Push gun electrical safety switch in, turn clockwise and release to arm gun (Figure 26-1). Ensure electrical safety switch flush with aircraft skin.

4. Indicate to aircrew that aircraft is armed and that personnel and equipment are clear.

**26-20. AFTER LANDING OR GROUND ABORT.**

26-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

26-22. **SAFING.** After Landing or Ground Abort Safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

26-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming.

1. Position safety person in view of aircrew.

2. Notify aircrew of intention to safe aircraft.

3. Push gun electrical safety switch in, turn counterclockwise and release to safe gun. Ensure safety switch extends (Figure 26-1).

4. Indicate to aircrew that aircraft is safe and that personnel and equipment are clear.

26-24. **DEARMING OR REARMING AREA (BEFORE ENGINE SHUTDOWN).** Perform the following:

**WARNING**

Do not stand directly in line of fire of forward firing ordnance.

Aircrew must place both hands in full view at all times during dearming.

If gun is jammed, refer to A1-F18AE-GJC-100 Gun Jam Clearing checklist.

**NOTE**

Dearming or Rearming Area procedures (before engine shutdown) may be performed after engine shutdown.

1. Open access door 6 and position manual clearing handle to clear position (Figure 26-1).

2. Cycle gun system until 12 rounds pass through the clearing cycle (Figure 26-15).



3. Pull and lock anti-jam pin (Figure 26-7).
4. Secure access door 6, manual clearing handle indicator extended (Figure 26-1).

26-25. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

1. Inspect M61 gun for missing, loose, or damaged components.

**NOTE**

If aircraft returns with unexpended ordnance, a WEAPON LOADED sign must be placed in cockpit.

2. (If applicable) Place WEAPON LOADED sign in cockpit.
3. Position all armament switches in accordance with Table 5-1.
4. Report status of aircraft to proper authority.

26-26. **TURNAROUND.** Turnaround procedures only apply to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 26-20).
2. For M61 gun without reload, reset rounds limiter.
3. For M61 gun reload, perform the following:

**NOTE**

Gun loading/unloading may be performed simultaneously.

- a. Perform M61 Gun/LALS Preparation (Paragraph 26-11).
- b. Perform M61 Gun Loading (Paragraph 26-12).
4. Perform Postloading Inspection (Paragraph 26-13).
5. Perform Prior to Launch procedures (Paragraph 26-15).

**26-27. WEAPON UNLOADING.**

26-28. **M61 GUN PREPARATION.** Prepare M61 gun for unloading as follows:

1. Perform Aircraft Preparation/Inspection (Paragraph 26-6).
2. Perform Weapon Inspection (Paragraph 26-8).

**Guns**

3. Perform M61 Gun/LALS Preparation (Paragraph 26-11).

26-29. **M61 GUN UNLOADING.** Unload gun as follows:

1. Position LALS for unloading.
2. On transfer unit, unlock and lower gate to open position. Ensure gate extends below loading tray (Figure 26-13).
3. Position upper latching pins to the applicable position, IN for MHU-130/131 and IN or OUT for GFK-21/A32K-7.
4. Verify gun is in timed position (Figure 26-8).
5. (MHU-130/131) Proceed as follows:
  - a. Remove interface unit from stowed position and ensure that unit is timed and in BYPASS position.

**NOTE**

If interface unit cannot be fully rotated up to allow release of the latch pins, rotation of timing gear knob may be required.

- b. Install interface unit by positioning the lower lugs over the roll pins on the transfer unit. Press loading tray latch and rotate interface unit upward and release upper latching pins to the OUT position (Figure 26-8).
  - c. Ensure latching pins are fully extended.
  - d. Remove and stow interface unit timing pin (Figure 26-7).
  - e. Position LALS to adjust tension on chutes.
  - f. (If applicable) Insert handcrank in entrance unit assembly, turn clockwise until all slack has been removed from the elements in the return chute.
  - g. (If applicable) Secure drum drive flexible shaft to transporter exit end with upper pin.
6. (GFK-21/E32K-7 LALS) Proceed as follows:

**WARNING**

When LALS unit is mounted on MHU-191/M transporter, the work platform stabilizing struts must be deployed for aircraft servicing.

- a. (As required) Release stabilizing struts and lower work platforms (Figure 26-4).

**NOTE**

Latch pins on aircraft adapter must be in unlocked position.

When AIU is connected to the gun system, the loader is grounded.

If the drive gear of the AIU does not mesh properly with the gears of the gun transfer unit, rotate the manual drive knob slightly in the SHIFT direction (while BOTH the AIU and AGFS timing pins are still engaged) to facilitate gear engagement.

- b. Connect AIU by positioning lower lugs over lower latch pins on aircraft transfer unit/adapter and rotate AIU upward until upper latches lock.
- c. Release AIU timing pin.
- d. Press and hold AIU declutch button (Figure 26-12).

**CAUTION**

Do not over-tension chute. Adjust tension so that conveyor elements are fully extended but not overly tight. Slight element play of up to 1/16 inch is acceptable. Over tensioning of conveyor elements can lead to premature chute failure.

- e. Reposition loader to apply tension to conveyor assembly. Release declutch button.
- f. Cycle ammunition loader while AIU is still in the BYPASS position to ensure proper tensioning of conveyor assembly.
- g. (As applicable) Set Aircraft Gun Feed System (AGFS) counter to 0000.
- h. Ensure shift interface unit/AIU LOAD/BYPASS lever to BYPASS.
- i. (As applicable) Set interface counter to 0000.

**NOTE**

Shift cycle should occur within one revolution of handcrank.

**WARNING**

Do not attempt to rotate system by hand or power pack if aircraft hydraulic system is pressurized.

Do not rotate or operate gun system without ensuring the manual clearing handle is in the clear position.

**CAUTION**

Handcrank must be rotated clockwise. Reverse rotation of the gun system can cause damage to the system and shall not be attempted.

Handcrank only must be used for GFK-21/E32K-7 until rounds enter AGFS. After rounds enter the gun feed system, either handcrank or pneumatic drive tool may be used.

13. Rotate interface unit LOAD/BYPASS lever to LOAD (Figure 26-10).
14. (Simultaneous loading) Set interface unit counter to 0000.

**WARNING**

Do not attempt to rotate gun system by hand or power pack if aircraft hydraulic system is pressurized.

Do not rotate or operate gun system without ensuring that manual clearing handle is in clear position.

**CAUTION**

Handcrank must be rotated clockwise. Reverse rotation of the gun system can cause damage to the system and shall not be attempted.

15. Manually cycle system until shifting gate shifts to LOAD.

**WARNING**

If gun system jams during loading or downloading, refer to A1-F18AE-GJC-100 Gun Jam Clearing checklist.

16. (If applicable) Powerpack unloading (Figure 26-14):
  - a. Insert power pack in transfer unit drive socket. Cycle system until desired quantity of rounds are loaded (simultaneous loading) and/or empty brass and cleared rounds are unloaded.

**CAUTION**

Only qualified personnel shall operate APU. Refer to A1-F18AC-LMM-000 for APU operating procedures.

17. (If applicable) APU unloading:
  - a. Verify right AMAD decoupled.
  - b. Start APU.

- c. Slowly pull hydraulic manual control (Figure 26-15).
  - d. Release hydraulic manual control when the desired quantity of rounds are loaded (simultaneous loading) and/or empty brass and cleared rounds are unloaded.
- 18. Shift LOAD/BYPASS lever to BYPASS.
  - 19. Cycle system slowly until system goes into BYPASS.
  - 20. Reposition LALS to enable removal of interface unit.

**WARNING**

When removing interface unit, rounds may fall from exposed transfer unit.

- 21. (MHU-130/131) Continue cycling system and install interface unit timing pin.
- 22. (MHU-130/131) Press and turn upper transfer unit latching pins to IN position.

**WARNING**

When removing interface unit, rounds may fall from exposed transfer unit.

- 23. (MHU-1310/131) Rotate interface unit down and lift free of lower transfer unit roll pins.
- 24. (GFK-21/E32K-7) Proceed as follows:
  - a. Disconnect AIU from gun system by depressing upper latches, rotating downward and lifting free from lower latch pins on transfer unit.
  - b. Ensure AIU is timed.

**CAUTION**

Ensure shift lever is in BYPASS position prior to AIU stowage.

When stowing AIU, be careful not to allow rotors of AIU to hit sides or opening of storage container or AIU hold-down bracket. Failure to do so may result in damage to AIU rotors.

- 25. Remove and stow interface unit.
- 26. Raise gate and lock.
- 27. Raise and lock loading tray.
- 28. (If applicable) Cycle system until first rounds appear in feed chute at transfer unit entrance.

**Guns**

29. (If applicable) Shutdown APU.
30. Recouple right AMAD.
31. (If applicable) Set rounds limiter as required (Figure 26-16).
32. Verify manual clearing handle in cleared position (Figure 26-1).
33. Position anti-jam pin in unlock position.

**NOTE**

Resetting of encoder-decoder is required when gun system has been loaded.

34. (If applicable) Reset gun encoder-decoder if gun system loaded (Figure 26-17).
35. Secure access door.
36. (If applicable) Remove/stow WEAPON LOADED sign from cockpit.
37. Remove tools and handling/loading equipment from area.

## SECTION XXVII BANNER TOW TARGETS

### 27-1. INTRODUCTION.

27-2. This section contains procedures for preparation, installation, and removal of the banner tow target listed below. Aircraft Preparation in Section V must be completed prior to loading.

#### NOTE

Refer to A1-F18AC-NFM-000 for Banner Tow Targets authorized loading.

TDU-32/B

### 27-3. ARMAMENT SUPPORT EQUIPMENT (ASE).

27-4. ASE for loading tow targets will be used as directed.

27-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific store and load being performed are mandatory for use and include:

<u>Quantity</u>	<u>Nomenclature</u>
1500 feet	Armored Steel Tow Cable (11/64-inch dia.)
75 feet	Steel Leader Cable (3/8-inch dia.)
1	Mk 8 Mod 0 Target Release Ring, with Mk 8 Mod 0 IP361 stenciled in white
4	Cable Clamps
2	Thimbles (1/4 inch)
8	Swaging Sleeves (5/32 inch)
1	Aerial Tow Target (TDU-32)
1	Banner Tow Adapter, PN 4205-01 Ser # 011 - 110 Swivel Assembly Safety Wire (.032-inch dia.)

### 27-6. AIRCRAFT PREPARATION/INSPECTION.

27-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

#### NOTE

The following procedures are normally accomplished by ground crew personnel in parking area prior to engine turn-up, but can also be accomplished at the end of the runway prior to target attachment.

1. Ensure arresting hook fairing, particularly the aft end, is free of cracks, delaminations, or signs of previous repair before installation of the tow banner adapter.

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### **Banner Tow Targets**

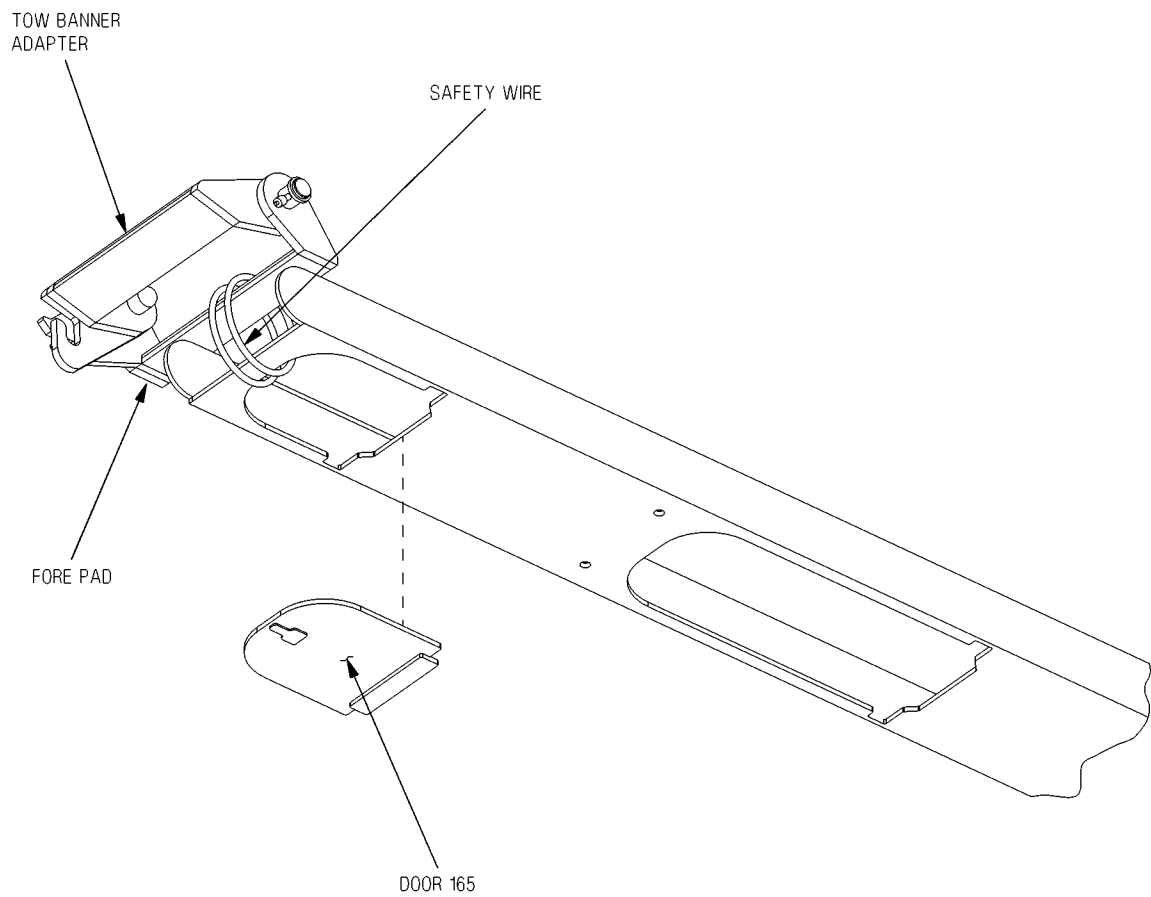
2. Insert the 1 1/4-inch tapered stud of the tow target adapter into the left-hand (LH) recess of the arresting hook assembly.
3. Raise the tow target adapter assembly to align the right-hand (RH) pin access hole of the hinge point with the recess hole of the tail hook trunnion assembly.
4. Insert and thread the 1 1/4-inch locking pin through the RH recess hole of the adapter and into the RH recess hole of the tail hook trunnion assembly and tighten. Align the 3/16-inch diameter hole.
5. Insert the pip-pin front to rear.
6. Safety wire pip-pin by looping safety wire around end of pip-pin and terminating at lock-unlock head of pip-pin.
7. Make 2 wire ropes by twisting 2 strands of .032 diameter safety wire, 18 inches in length, into a rope.
8. Open arresting hook fairing door 165 (Figure 27-1).
9. Run the two wire ropes through the open door 165, out the open end of the arresting hook fairing, and around the fore pad of the tow banner adapter.
10. Twist the ends of each wire rope together to secure the adapter to the aircraft.
11. Run a twisted double strand of safety wire through the latch door 165, and safety wire the door up against the 2 stranded wire ropes as much as possible. Twist the ends of the double stranded safety wire together, securing door 165.
12. The gap between the arresting hook fairing and door 165 should be less than 1/4 inch.

### **27-8. TARGET INSPECTION/CABLE INSPECTION.**

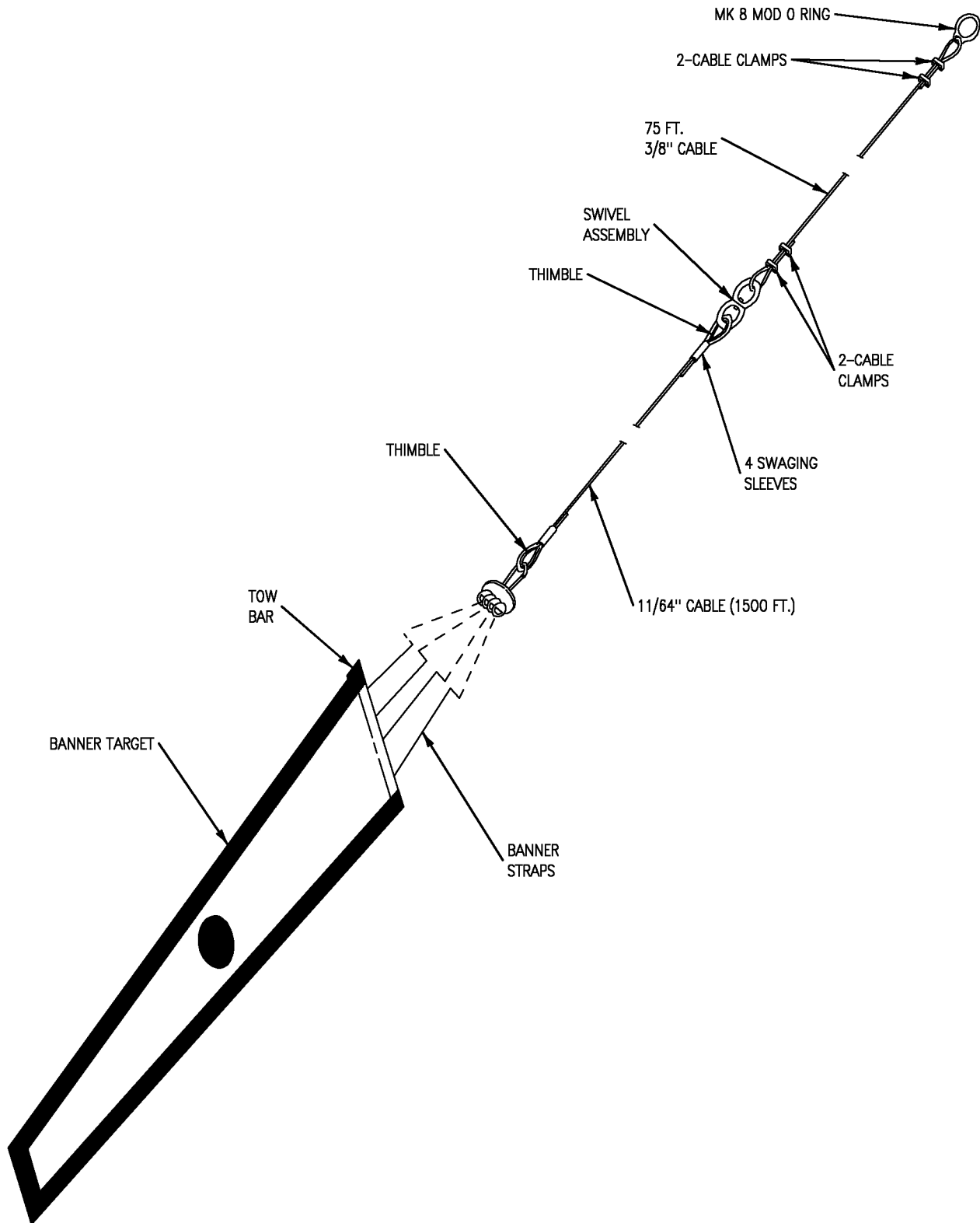
27-9. Reject target and notify proper authority if inspection reveals target is not acceptable for loading. Inspect the targets for loading as follows (Figure 27-2):

1. Banner target completely assembled.
2. Inspect for damage on the following banner components:
  - a. Stitching on panel leading edge loop for broken or frayed threads.
  - b. Bridle straps for fraying and snap hook for proper operation.
  - c. Tow bar for obvious damage.
  - d. Snap hook retainer "U" bolt for evidence of thread damage.
  - e. Connecting parts for tightness and security.
3. Inspect 11/64-inch tow cable and 3/8-inch steel leader for broken wires, knots, kinks, or untwisted sections.





**Figure 27-1. Tow Banner Adapter**



**Figure 27-2. Tow Banner/Tow Cable - Typical**

## **27-10. CABLE PREPARATION.**

### **CAUTION**

Target release ring Mk 8 Mod 0 with IP361 stenciled in white ink is only authorized release ring.

### **NOTE**

Detailed procedures contained in NAVAIR 28-10A-501.

1. Prepare aircraft end of 3/8-inch cable by attaching a Mk 8 Mod 0 ring and two cable clamps.
2. Route the other end of the 3/8-inch cable through the swivel assembly and secure with two cable clamps.
3. Attach 11/64-inch cable to swivel assembly by using one thimble and four swaging sleeves.
4. Prepare banner end of 11/64-inch cable by using one thimble and four swaging sleeves.

## **27-11. TARGET STAGING.**

1. Ensure Target Inspection/Cable Preparation procedures have been performed.
  - a. Perform the following for target/cable layout:

### **NOTE**

If arresting gear utilizes permanent type stanchions (risers), banner tow target must be started forward of stanchions.

- b. Unreel properly configured tow cable on the runway (Paragraph 27-10).
  - c. Unroll the banner tow target.
  - d. Ensure straps on banner target are pulled straight.
  - e. Hook towline thimble into banner snap hook (Figure 27-3).

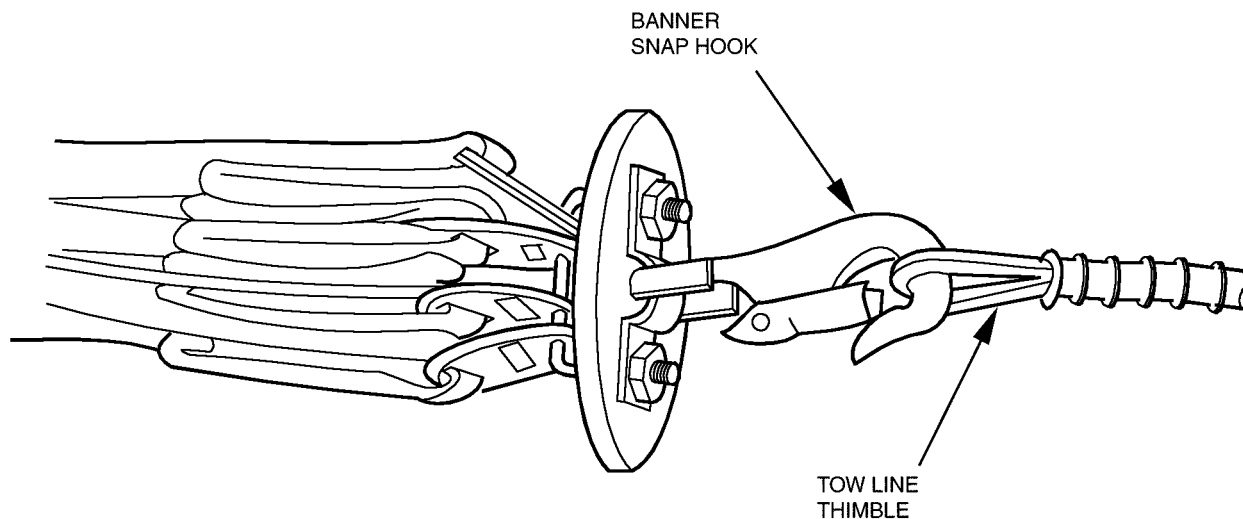
## **27-12. PRIOR TO LAUNCH.**

1. Taxi aircraft into position. When aircraft is fully stopped, perform the following:

### **WARNING**

Aircrew must place both hands in view of banner crew.

- a. Position safety person in view of aircrew.



**Figure 27-3. Tow Cable Hooked to Banner Tow Target Snap**

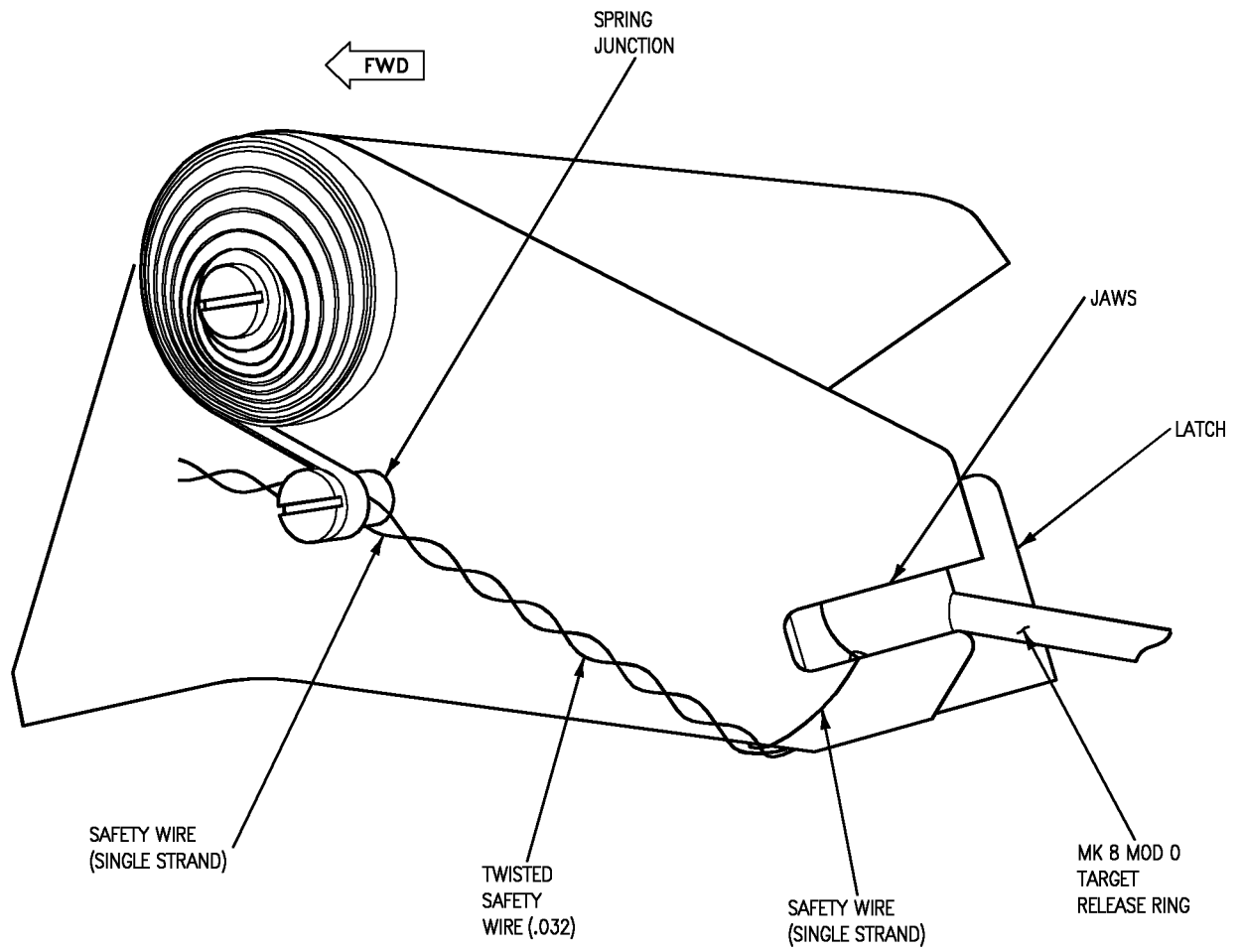
2. Target attachment:

- a. Retrieve the forward end of the steel tow cable and pull it to the rear end of the aircraft.

**WARNING**

The hookup crew must remain clear of hook fall area and engine exhaust.

- b. Pull down on the padded section of the tow target assembly until the latch is open.
- c. Insert the Mk 8 Mod 0 tow ring and release the lower padded section of tow target assembly to lock the Mk 8 Mod 0 tow ring in the adapter.
- d. Safety wire adapter, PN 4205-01, as follows (Figure 27-4):
  - (1) Route single strand of safety wire forward of Mk 8 Mod 0 target release ring through jaws of adapter.
  - (2) Twist safety wire under lower jaw to ensure that latch does not open.
  - (3) Continue to twist safety wire to spring junction on side of adapter.
  - (4) Wrap single strand of safety wire around spring junction.
  - (5) Twist safety wire approximately 5 turns. Terminate safety wire.



**Figure 27-4. Banner Adapter - Safety Wired**

**Banner Tow Targets**

- e. Exit from beneath the aircraft.
- f. Indicate to aircrew that banner hookup is complete.

**27-13. GROUND ABORT.**

27-14. Ground abort procedures pertain to an aircraft that has returned from a target mission or to an aircraft equipped to tow targets as a result of a ground abort.

**WARNING**

Aircrew must place hands in full view at all times.

1. Position safety person in view of aircrew.
2. Tow banner adapter (Figure 27-1):
  - a. Cut safety wire.
  - b. Open latch on tow banner adapter; remove tow ring; close latch.
3. (If applicable) Indicate to aircrew banner removal is complete.

**27-15. SAFING.**

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. Verify that all armament switches are positioned in accordance with Table 5-1.
3. (If applicable) Power removed.

**WARNING**

Aircrew must place hands in full view at all times.

**NOTE**

If target removal is to be performed with engines turning, the following step applies.

4. Position safety person in view of aircrew.

**WARNING**

If any adapter component is missing, loose, or damaged, notify proper authority.

5. Inspect tow adapters for missing, loose, or damaged components.
6. Cut the safety wire which is routed from adapter jaws to spring junction.

7. Open latch on tow banner adapter.
  8. Remove Mk 8 Mod 0 tow ring.
  9. Close latch on tow banner adapter.
  10. (If applicable) Indicate to aircrew that tow banner removal is complete.
- 27-16. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.
1. Ensure Ground Abort procedures have been performed (Paragraph 27-13).
  2. Perform Target Inspection/Cable Preparation for targets to be loaded (Paragraph 27-8).
  3. Perform Target Staging procedures (Paragraph 27-11).
  4. Perform Prior to Launch procedures (Paragraph 27-12).

**27-17. TOW BANNER ADAPTER REMOVAL.**

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft.
4. Verify that all armament switches are positioned in accordance with Table 5-1.
5. Verify that ground safety handle is LOCKED on all loaded stations.
6. Ensure ground safety pin is installed in arresting hook.
7. Remove tow banner adapter by removing pip-pin and the 1 1/4-inch locking pin. Lower right hand side of adapter to clear hinge point and slide 1 1/4-inch tapered stud out of left-hand recess of the arresting hook assembly.





**SECTION XXVIII**  
**DATA POD**

**28-1. INTRODUCTION.**

28-2. This section contains loading and unloading information for the pods listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AN/AWW-13 Data Pod

ARQ-56 (ATARS) Data Pod

**28-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

28-4. ASE authorized for loading data pods is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

28-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include.

1. None.

**28-6. AIRCRAFT PREPARATION/INSPECTION.**

28-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

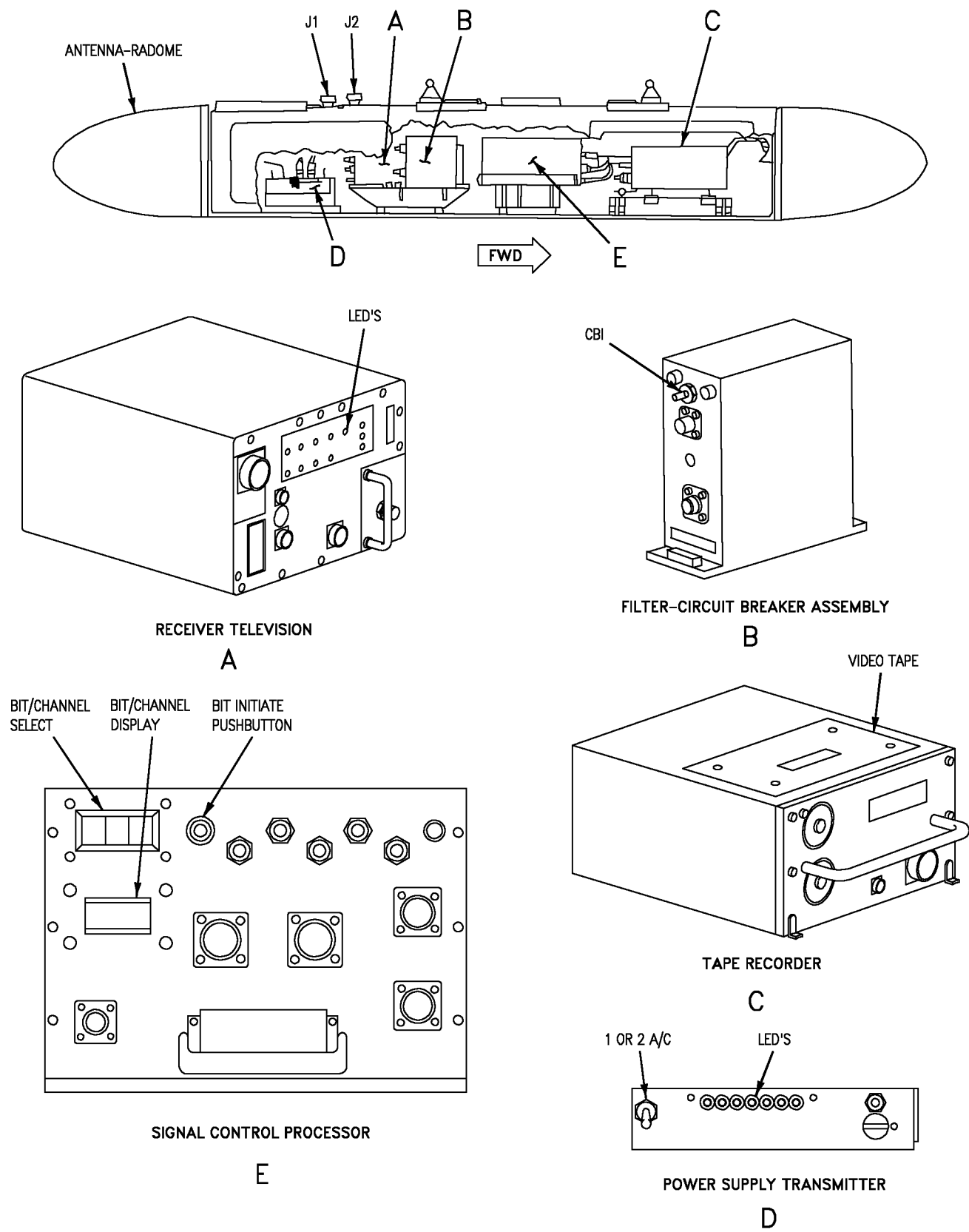
1. (ARQ-56) Verify modified SUU-62 centerline pylon is installed.
2. Ensure swaybraces are inspected and adjusted to the extended position on stations to be loaded (Paragraph 5-10).
3. Ensure suspension hooks are open on stations to be loaded.
4. Verify adapter cable installed (Figures 3-14, 3-15 and 3-17).

**28-8. WEAPON INSPECTION.**

28-9. Reject data pod and notify proper authority if inspection reveals data pod is not acceptable for loading. Inspect data pod for loading as follows:

1. Inspect AN/AWW-13 as follows (Figure 28-1).

**A1-F18AE-LWS-000**  
**Data Pod**



**Figure 28-1. AN/AWW-13 Guided Weapon Control - Monitor Set**

**CAUTION**

Handle the pod carefully to avoid damage to radomes. Do not exert excessive pressure on the radomes.

**NOTE**

It may be difficult to open the forward and aft access doors while the pod is positioned on handling/loading equipment. Therefore, inspection of the pod interior is not required prior to loading.

- a. Verify the exterior of the pod and forward and aft radomes are not damaged.
  - b. Remove the electrical receptacle protective cover.
  - c. Verify the electrical receptacle(s) is clean and not damaged.
  - d. Reinstall the electrical receptacle protective cover.
  - e. Ensure 30-inch suspension lugs are installed with base of lug eye flush with top of lug wells.
  - f. (As applicable) Ensure forward and aft access doors are secured.
2. Inspect AN/ARQ-56 as follows (Figure 28-2).

**CAUTION**

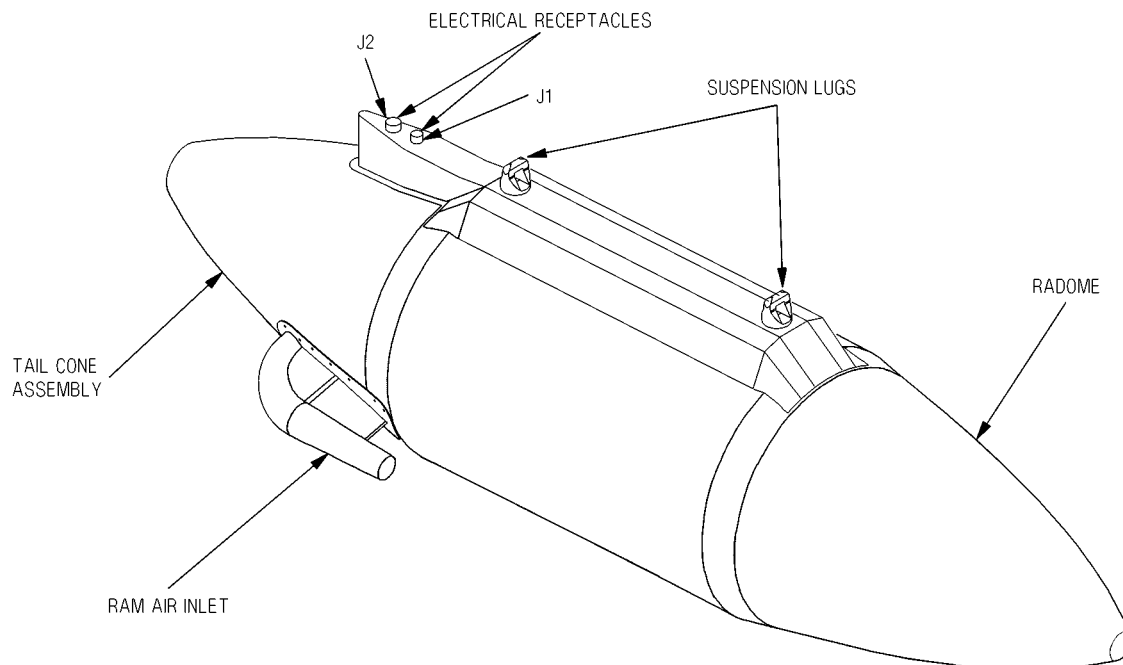
Handle the pod carefully to avoid damage to radome and the ram air inlet duct. Do not exert excessive pressure on the radome.

- a. Verify the exterior of the pod is not damaged.
- b. Remove ram air inlet cover. Verify ram air inlet not damaged and free of foreign materials. Reinstall cover.
- c. Remove electrical receptacle protective covers. Verify electrical receptacles are clean and not damaged. Reinstall protective covers.
- d. Ensure 30 inch suspension lugs are installed with base of lug eye flush with top of lug wells.
- e. Ensure access door and panels are secure.

**28-10. WEAPON LOADING.**

28-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 28-6) and Weapon Inspection (Paragraph 28-8) have been completed.
2. Verify that aircraft is grounded.



**Figure 28-2. AN/ARQ-56 (ATARS) Data Link Pod**

3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with pod under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33).
  - a. (AWW-13) (As applicable) Install hoisting band and single store trolleys on pod.
  - b. (ARQ-56) (As applicable) Install Walleye II trollies on pod.
  - c. Operate hoist to remove slack from cable.
  - d. Position one person at nose and one person at tail of pod to steady pod while hoisting.
  - e. Remove weapon tiedown straps securing pod to handling equipment.
7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

28-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

**CAUTION**

Handle the pod carefully to avoid damage to the radomes/ram air inlet ducts. Do not exert excessive pressure on the radomes.

(AN/AWW-13) The data pod is tail-heavy and must be supported.

**NOTE**

(AN/ARQ-56) Weapon loader forks with rollers do not align with pod hard points. Fuel tank adapters must be used when loading with weapon loader (SATS).

To aid in electrically connecting pod, umbilical cable may be connected to pod as pod is being raised. (Refer to Steps 4 and 5.)

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise pod until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until pod weight is supported by bomb rack suspension hooks.
  - d. Gently shake pod to ensure pod is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
  - f. Remove weapon tiedown straps.

2. (If applicable) Bomb hoist loading:

**CAUTION**

Handle the pod carefully to avoid damage to the radomes/ram air inlet ducts. Do not exert excessive pressure on the radomes.

(AN/AWW-13) The data pod is tail-heavy and must be supported while hoisting.

**NOTE**

To aid in electrically connecting pod, umbilical cable may be connected to pod as pod is being raised. (Refer to Steps 4 and 5.)

**Data Pod**

- a. Hoist pod until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - c. Ease hoist until pod weight is supported by bomb rack suspension hooks.
  - d. Gently shake pod to ensure pod is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and pod.
  4. Remove pod electrical receptacle protective cover.

**NOTE**

AN/AWW-13 pods use electrical receptacle J2 for 1760 communication.

5. Connect adapter cable to the pod electrical receptacle as follows (Figures 28-1 and 28-2 ):
  - a. AN/AWW-13:
    - (1) Place connector over the pod electrical receptacle.
    - (2) Align white line on adapter connector shell with major keyway on pod receptacle.
    - (3) Rotate connector shell approximately 120 degrees clockwise until the detent is felt and locking pin is visible.
  - b. (ARQ-56) Attach umbilical connectors to pod receptacles J1 and J2.
6. Ensure there is slack in the cable bail and the bail is not twisted around the adapter cable, and connected to bail rod.
7. (ARQ-56) Perform operational check in accordance with A1-F18AC-770-200, WP 017 00.
8. (AN/AWW-13) Perform Pod BIT as follows:
  - a. Open the pod forward and aft access doors (Figure 28-1).
  - b. Ensure CB1 circuit breaker is ON.
  - c. (AN/AWW-13) Position the 1 or 2 A/C switch to 2 A/C.
  - d. Ensure 666/005 displayed on the SCP.

**CAUTION**

Do not extend VCTR to access/inspect cassette installation/removal.

- e. Press the VCTR CASSETTE REMOVE control. Ensure cassette is installed.
- f. Perform data link pod BIT preparation procedures as follows:
  - (1) Position all armament switches in accordance with Table 5-1.
  - (2) Connect electrical power to aircraft.
  - (3) (If applicable) Apply cooling air.

**WARNING**

Prior to applying power, cockpit switches and controls must be ready to receive power.

- (4) On the GND PWR control panel, position the EXT PWR switch to RESET and back to NORM. Set and hold switches 1 and 2 to B ON for 3 seconds.
- (5) Position the left and right DDI power switches to DAY (allow warm-up time).
- (6) On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.
- (7) On the right DDI, press the STORES pushbutton.
- (8) On the left DDI, press and release the MENU pushbutton until the BIT pushbutton option is displayed.
- (9) On the left DDI, press and release the BIT pushbutton.

g. On F/A-18C and F/A-18D; also F/A-18A 162394 thru 163175 after F/A-18 AFC 253 or F/A-18 AFC 292, configured with 1760 adapter cable(s) proceed with AN/AWW-13 pod BIT procedures as follows:

- (1) On the GND PWR control panel, set and hold switch 3 to B ON for 3 seconds.

**NOTE**

When SMS BIT is complete and PBIT GO displayed on the left DDI, pod powerup BIT is automatically performed.

- (2) On the right DDI, TEST is displayed under each DL 13 in the wingform until pod(s) powerup BIT is complete.
- (3) On the MASTERARM control panel, select A/G.

**WARNING**

LO PWR must be selected or a radiation hazard to personnel will exist within 48 inches of pod antenna radomes.

**NOTE**

Ensure TEST is not displayed on the right DDI before selecting DL 13 pod.

(4) On the right DDI, select DL 13, FWD ANT and LO PWR.

(5) On the left DDI, press and release STORES pushbutton option, STORES BIT display appears.

(6) On the left DDI, press and release the STATION pushbutton option, STATION BIT display appears.

**WARNING**

The pod antennas will radiate approximately 200 milliwatts of RF power during initiated BIT checks (LO PWR).

(7) On the left DDI, press and release the DL 13 pushbutton option. Initiated pod BIT is in progress.

(8) On the left DDI, TEST is displayed then GO when BIT is complete.

**NOTE**

POD GO will be displayed twice. Once for powerup and once for the RF loop portion of BIT.

(9) On the right DDI, POD GO is displayed on the pod display.

(10) On the right DDI, press and release the MENU pushbutton until the STORES pushbutton option is displayed.

(11) On the right DDI, press and release the STORES pushbutton.

(12) On the right DDI, RDY is displayed below 1 DL 13 when BIT is complete.

(13) On the right DDI, deselect DL 13.

(14) (If applicable) Repeat steps (4) through (13) for each pod loaded.

h. On aircraft configured with WALLEYE adapter cable (PN 74A756225), proceed with centerline station AN/AWW-13 pod BIT procedures as follows.

(1) On the GND PWR control panel, set and hold switch 3 to B ON for 3 seconds.



**NOTE**

(OFP 13C, 13C SMUG, 15C AND 17C) PBIT GO displayed below STORES when SMS BIT is complete.

(OFP 10A AND 12A) SMS GO displayed when SMS BIT is complete.

- (2) On the right DDI, DLP/DL9 displayed in wingform when SMS BIT is complete.
- (3) On the master arm control panel, select A/G.
- (4) (OFP 13C, 13C SMUG, 15C AND 17C) on the right DDI:
  - (a) Press and release the DL9 pushbutton option.
  - (b) Press and release the WPN pushbutton option.
  - (c) Press and release the WEDL pushbutton option.
  - (d) Ensure pod display appears on right DDI.
- (5) (OFP 10A AND 12A) on the right DDI:
  - (a) Press and release the DLP pushbutton option.
  - (b) Ensure pod display appears on right DDI.
- (6) On the signal control processor, position the BIT/CHANNEL SELECT to 666.
- (7) Verify that the data pod fault lights (red) are not on.
- (8) Verify the data pod receiver television indicators as follows.
  - (a) LOC OSC to NORM.
  - (b)  $\pm 12$  VDC to ON.
  - (c)  $\pm 15$  VDC to ON.
  - (d) LED's (green) on.
- (9) Verify the data pod transmitter power supply +12, -12 and NORM lights are (green) on.
- (10) On the signal control processor, position the BIT/CHANNEL SELECT to 003.
- (11) On the signal control processor, press and release the BIT INITIATE pushbutton. POD GO displayed on the right DDI when BIT complete.
- (12) On the signal control processor, position the BIT/CHANNEL SELECT to 005.

**Data Pod**

(13) On the signal control processor, press and release the BIT INITIATE pushbutton. POD GO displayed on right DDI when BIT complete.

(14) On the signal control processor, position the BIT/CHANNEL SELECT to 666.

(15) On the right DDI, deselect the data pod.

i. Position the left and right DDI power switches to OFF.

j. On the master arm control panel, deselect A/G.

k. On the GND PWR control panel, position the EXT PWR switch to OFF.

l. Remove electrical power from aircraft.

m. (If applicable) Remove cooling air.

n. (AN/AWW-13) Secure the pod access doors by rotating the locking mechanism approximately 90 degrees clockwise and securing the tabs on the locking mechanism.

<b>WARNING</b>
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A radiation hazard to personnel exists within 48 inches of pod antenna radomes during pod command transmission.

o. (AN/AWW-13/AGM-84H/K) Perform Data Link Marriage check (refer to Paragraph 5-38).

(1) (As applicable) Remove external air and electrical power from aircraft.

9. (If applicable) Return landing gear doors to normal position.

10. (As required) Install cartridges in all loaded bomb racks and tighten cartridge retainers and auxiliary cartridge caps.

11. Place WEAPON LOADED sign in cockpit.

12. Remove tools and handling/loading equipment from area.

**28-13. POSTLOADING INSPECTION.**

28-14. Perform Postloading Inspection for data pod by verifying the following:

1. Position all armament switches in accordance with Table 5-1.

2. WEAPON LOADED sign in cockpit.

3. Ground safety handles in LOCKED position on loaded stations.

4. Swaybraces properly seated.
5. (As required) Cartridges installed in all loaded bomb racks, cartridge retainers and auxiliary cartridge caps tight.
6. Adapter cable(s) connected to pod.
7. AN/AWW-13:
  - a. Open the pod forward/aft access doors by pulling out the two tabs on the door locking mechanism and rotating the mechanism approximately 90 degrees counterclockwise, unlocking the door.



Do not extend VCTR to access/inspect cassette installation/removal.

- b. Video cassette tape recorder installed, loaded with tape and secure.
  - c. CB1 circuit breaker - ON.
  - d. Secure the pod access doors by rotating the locking mechanism approximately 90 degrees clockwise and securing the tabs on the locking mechanism.
8. AN/ARQ-56:
    - a. Pod operational check completed.
    - b. Ram air inlet cover installed.
    - c. Pod access doors and panels secure.
  9. Suspension hooks are open on unloaded stations.
  10. Verify proper code inputs inserted in Weapons Insertion Panel for stores on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
  11. Tools and handling/loading equipment removed from area.
  12. Report status of aircraft to proper authority.

#### **28-15. PRIOR TO LAUNCH.**

28-16. Prior to launch procedures are performed in the rearming area before engine turn-up, rearming area after engine turnup and in the arming area. Perform prior to launch procedures as follows:

28-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.

**Data Pod**

2. (ARQ-56) Remove ram air inlet cover and retain.
3. Secure all other access doors.

28-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** There are no procedures to be performed for data pod in the rearming area.

28-19. **ARMING AREA.** There are no procedures to be performed for data pod in the arming area.

**28-20. AFTER LANDING OR GROUND ABORT.**

28-21. After landing or ground abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

28-22. **SAFING.** After landing or ground abort safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

28-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for the data pod in the dearming area before engine shutdown.

28-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. Position all armament switches in accordance with Table 5-1.

**NOTE**

If aircraft returns with unexpended ordnance a WEAPON LOADED sign must be placed in cockpit.

3. (If applicable) Place WEAPON LOADED sign in cockpit.

**WARNING**

If any component is missing, loose, or damaged, notify proper authority.

4. (ARQ-56) Install ram air inlet duct cover.
5. Report status of aircraft to proper authority.

28-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 28-20).
2. (As applicable) Prepare the pod for turnaround as follows:
  - a. AN/AWW-13:

- (1) Open the pod forward access door.



Do not extend VCTR to access/inspect cassette installation/removal.

- (2) Press the VCTR CASSETTE REMOVE control, remove used cassette and install new cassette.

**NOTE**

Forward used cassette to proper authority.

- (3) Secure forward access door.
3. Perform Postloading Inspection (Paragraph 28-13).
4. Perform Prior to Launch procedures (Paragraph 28-15).

**28-26. WEAPON UNLOADING.**

28-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove cartridge retainers, auxiliary cartridge caps and cartridges on stations to be unloaded.
7. Disconnect adapter cable(s) from the pod electrical receptacle(s). If available, install the receptacle protective cover(s).
8. (ARQ-56) Ensure ram air inlet cover is installed.
9. (AN/AWW-13) To remove video cassette perform the following:
  - a. Open the pod forward access door.

**CAUTION**

Do not extend VCTR to access/inspect cassette installation/removal.

- b. Press the VCTR CASSETTE REMOVE control and remove cassette. (If applicable) Install new cassette.
- c. Secure forward access door.

**CAUTION**

Verify handling/loading equipment is configured to accept data pod. Handle the pod carefully to avoid damage to the pod radomes/air inlet duct. Do not exert excessive pressure on the radomes.

10. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).

**NOTE**

Landing gear doors must be retracted when unloading centerline station.

11. (Centerline station) Retract landing gear doors and hold in position.
12. Position handling/loading equipment under station to be unloaded and secure.

**NOTE**

(AN/ARQ-56) Weapon loader forks with rollers do not align with pod hard points. Fuel tank adapters must be used when loading with weapon loader.

13. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until pod is supported.
  - b. Secure pod to handling/loading equipment with weapon tiedown straps.
14. (If applicable) Bomb hoist unloading (Paragraph 5-33):
  - a. Install hoisting band and trolleys on pod.
  - b. Operate hoist until hoist is supporting pod.
  - c. Position one person at nose and one person at tail of pod to steady and guide pod onto weapon handling/loading equipment.

28-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:



Handle the pod carefully to avoid damage to the radomes/ram air inlet duct. Do not exert excessive pressure on the radomes.

(AN/AWW-13) The data pod is tail-heavy and must be supported.

1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
2. (If applicable) Bomb hoist unloading:



(AN/AWW-13) The data pod is tail-heavy and must be supported when unloading.

- a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower pod onto handling equipment.
  - d. Secure pod to handling equipment with weapon tiedown straps.
3. Remove handling/loading equipment with pod from under aircraft.
  4. (If applicable) Return landing gear doors to normal position.
  5. Install cartridge retainers and auxiliary cartridge caps.
  6. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
  7. Secure access doors and panels.
  8. (If applicable) Remove/stow WEAPON LOADED sign.
  9. Remove pod and handling/loading equipment from area.





**SECTION XXIX**  
**AN/ALQ-167**

**29-1. INTRODUCTION.**

29-2. This section contains loading and unloading information for the pod listed below. Procedures in this section are based on the premise that the aircraft is properly configured for loading. Preloading checks in Section IV and Aircraft Preparation/Inspection in Section V must be completed prior to loading.

**NOTE**

Refer to NWP 3-22.5-F/A18 Vol. IV, A1-F18AC-TAC-020/(C) for authorized loading.

AN/ALQ-167 Countermeasures Set (Pod)

**29-3. ARMAMENT SUPPORT EQUIPMENT (ASE).**

29-4. ASE authorized for loading AN/ALQ-167 is listed in Table 5-7. Refer to Table 5-7 to match equipment with weapon to be loaded.

29-5. **TOOLS AND TEST EQUIPMENT.** Tools and test equipment that apply to the specific weapon and load being performed are mandatory for use and include:

1. None.

**29-6. AIRCRAFT PREPARATION/INSPECTION.**

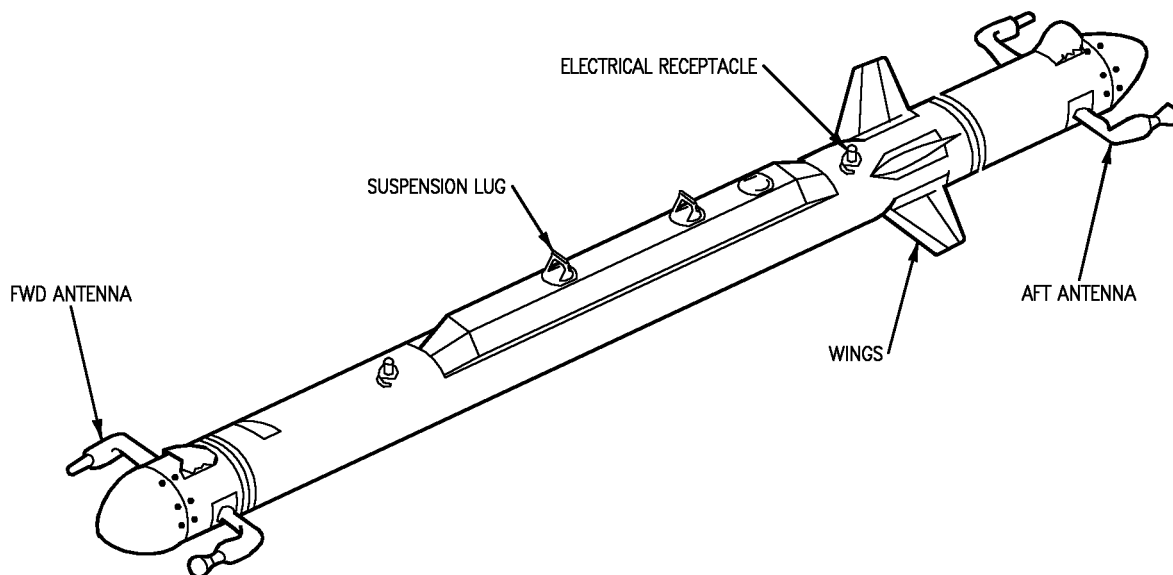
29-7. Prepare/inspect aircraft for loading as outlined in Paragraph 5-3, and as follows:

1. Ensure swaybraces are inspected and adjusted to the extended position on stations to be loaded (Paragraph 5-10).
2. Ensure suspension hooks are open on stations to be loaded.
3. Install adapter cable (Paragraph 3-9).

**29-8. WEAPON INSPECTION.**

29-9. Reject pod and notify proper authority if inspection reveals pod is not acceptable for loading. Inspect pod for loading as follows (Figure 29-1):

1. Ensure pod is not damaged.
2. Ensure suspension lugs are installed.
3. Verify antenna covers installed.
4. Remove antenna covers and verify antennas secure and not damaged; reinstall covers.
5. Remove electrical receptacle dust cover and verify electrical receptacle clean and not damaged.



**Figure 29-1. AN/ALQ-167 Inspection**

6. Ensure pod access doors/panels secured.
7. Verify retaining ring bolts are safety wired.

## **29-10. WEAPON LOADING.**

29-11. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for loading as follows:

1. Verify Aircraft Preparation/Inspection (Paragraph 29-6) and Weapon Inspection (Paragraph 29-8) have been completed.
2. Verify that aircraft is grounded.
3. Position all armament switches in accordance with Table 5-1.
4. (If applicable) Install hoist adapters and bomb hoist on station to be loaded (Paragraph 5-33).
5. Position handling/loading equipment with pod under station to be loaded and secure.
6. (If applicable) Bomb hoist loading (Paragraph 5-33).
  - a. (As applicable) Install hoisting band and single store trolleys on pod.
  - b. Operate hoist to remove slack from cable.
  - c. Position one person at nose and one person at tail of pod to steady pod while hoisting.

- d. Remove weapon tiedown straps securing pod to handling equipment.
7. Set proper code inputs in Weapons Insertion Panel for weapons/fuzes on stations being loaded (Paragraph 5-21).

29-12. **BRU-32 RACK LOADING.** Load BRU-32 rack as follows:

1. (If applicable) Bomb truck/weapon loader loading:
  - a. Raise pod until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).

**NOTE**

Tiedown straps should be loosened prior to lowering loading equipment.

- c. Lower bomb truck/weapon loader until pod weight is supported by bomb rack suspension hooks.
- d. Gently shake pod to ensure pod is supported by bomb rack suspension hooks and swaybraces are properly seated.
- e. Rotate ground safety handle to the LOCKED position.
- f. Remove weapon tiedown straps.
2. (If applicable) Bomb hoist loading:
  - a. Hoist pod until both suspension lugs enter bomb rack suspension hooks and hooks latch.
  - b. Visually inspect rack indicates LOCKED (Paragraph 5-9).
  - c. Ease hoist cable until pod weight is supported by bomb rack suspension hooks.
  - d. Gently shake pod to ensure pod is supported by bomb rack suspension hooks and swaybraces are properly seated.
  - e. Rotate ground safety handle to the LOCKED position.
3. Lower bomb truck/weapon loader or remove hoisting equipment from bomb rack and pod.
4. Connect adapter cable to pod.

**NOTE**

Cartridges are not installed on stations loaded with AN/ALQ-167.

5. Install and tighten cartridge retainers and auxiliary cartridge cap (Paragraph 5-24).

6. Place WEAPON LOADED sign in cockpit.
7. Remove tools and handling/loading equipment from area.

**29-13. POSTLOADING INSPECTION.**

29-14. Perform Postloading Inspection for weapons loaded by verifying the following:

1. Position all armament switches in accordance with Table 5-1.
2. WEAPON LOADED sign in cockpit.
3. Ground safety handles in LOCKED position on loaded stations.
4. Swaybraces properly seated.
5. Cartridges not installed on AN/ALQ-167 station; cartridge retainers and auxiliary cartridge caps tight (all stations).
6. Adapter cable connected to pod.
7. Suspension hooks open on unloaded stations.
8. Verify proper code inputs inserted in Weapons Insertion Panel for stores on stations loaded and verify all unloaded station codes are set as required (Paragraph 5-21).
9. Tools and handling/loading equipment removed from area.
10. Report status of aircraft to proper authority.

**29-15. PRIOR TO LAUNCH.**

29-16. Prior to Launch procedures are performed in the rearming area before engine turnup, rearming area after engine turnup, and in the arming area. Perform Prior to Launch procedures as follows:

29-17. **REARMING AREA (BEFORE ENGINE TURNUP).** Perform the following:

1. Remove/stow WEAPON LOADED sign.
2. Remove antenna covers.
3. Secure access doors and panels.

29-18. **REARMING OR ARMING AREA (AFTER ENGINE TURNUP).** Perform the following:

1. Position safety person in view of aircrew.

**WARNING**

The AN/ALQ-167 pod output level is hazardous to personnel. Personnel must be familiar with radiation hazard for both personnel and ordnance.

Remain clear of pod (15 feet forward/aft and 3 feet either side) when pod is operating

**NOTE**

A minimum of 3 minutes in the standby mode is required for AN/ALQ-167 pod warm up.

2. Open aft section door.
3. Signal aircrew to position AN/ALQ-167 control panel switch to STANDBY.
4. Verify AN/ALQ-167 pod standby light is on.

**WARNING**

RADIATION HAZARD present if OPERATE light comes on. Signal aircrew to position AN/ALQ-167 control panel switch to PWR OFF.

5. Signal aircrew to position AN/ALQ-167 control panel switch to OPERATE.
6. Verify AN/ALQ-167 pod STANDBY light remains on.
7. Verify AN/ALQ-167 pod fault light is off.
8. Signal aircrew to position AN/ALQ-167 control panel switch to PWR OFF.
9. Close aft section door.

29-19. **ARMING AREA.** There are no procedures to be performed for the AN/ALQ-167 in the arming area.

**29-20. AFTER LANDING OR GROUND ABORT.**

29-21. After Landing or Ground Abort procedures pertain to an aircraft that has returned from an ordnance mission or to an aircraft with loaded weapons as a result of a ground abort.

29-22. **SAFING.** After Landing or Ground Abort Safing procedures are performed in a designated dearming area before engine shutdown and in the dearming or rearming area after engine shutdown.

29-23. **DEARMING AREA (BEFORE ENGINE SHUTDOWN).** There are no procedures to be performed for the AN/ALQ-167 in the dearming area before engine shutdown.

29-24. **DEARMING OR REARMING AREA (IMMEDIATELY AFTER ENGINE SHUTDOWN).** Perform the following:

1. Verify ground safety handles in LOCKED position on all loaded stations.
2. Position all armament switches in accordance with Table 5-1.
3. Place WEAPON LOADED sign in cockpit.
4. Install antenna covers.

29-25. **TURNAROUND.** Turnaround procedures apply only to aircraft not requiring reconfiguration.

1. Ensure After Landing or Ground Abort procedures have been performed (Paragraph 29-20).
2. Perform applicable Aircraft Preparation/Inspection (Paragraph 29-6).
3. Perform applicable Weapon Inspection for pods to be loaded (Paragraph 29-8).
4. Perform Postloading Inspection (Paragraph 29-13).
5. Perform Prior to Launch procedures (Paragraph 29-15).

**29-26. WEAPON UNLOADING.**

29-27. **BRU-32 RACK PREPARATION.** Prepare BRU-32 rack for unloading as follows:

1. Position aircraft in rearming area.
2. (If applicable) Verify power is removed from aircraft.
3. Ground aircraft (Paragraph 5-5).
4. Position all armament switches in accordance with Table 5-1.
5. Verify ground safety handle is LOCKED on all loaded stations.
6. Remove adapter cable from pod and aircraft.

<b>CAUTION</b>
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Verify handling/loading equipment is configured to accept pod being unloaded.

7. (If applicable) Install hoist adapters and bomb hoist on station to be unloaded (Paragraph 5-33).
8. Position handling/loading equipment under station to be unloaded.
9. (If applicable) Bomb truck/weapon loader unloading:
  - a. Raise bomb truck/weapon loader until pod is supported.

- b. Secure pod to handling/loading equipment with weapon tiedown straps.
10. (If applicable) Bomb hoist unloading (Paragraph 5-33):
- a. Install hoisting band and trolleys on pod.
  - b. Operate hoist until hoist is supporting pod.
  - c. Position one person at nose and one person at tail of pod to steady and guide pod onto handling/loading equipment.

29-28. **BRU-32 RACK UNLOADING.** Unload BRU-32 rack as follows:

- 1. (If applicable) Bomb truck/weapon loader unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Lower bomb truck/weapon loader.
- 2. (If applicable) Bomb hoist unloading:
  - a. Rotate ground safety handle to UNLOCKED.
  - b. Rotate MANUAL RELEASE to open suspension hooks.
  - c. Operate hoist to lower pod onto handling equipment.
  - d. Secure pod to handling equipment with weapon tiedown straps.
- 3. Remove handling/loading equipment with pod from under aircraft.
- 4. Set proper code inputs in Weapons Insertion Panel for all stations as required (Paragraph 5-21).
- 5. Secure access doors and panels.
- 6. (If applicable) Remove/stow WEAPON LOADED sign.
- 7. Remove pod and handling/loading equipment from area.





## **GLOSSARY**

### **A**

A/A - Air to Air.

AAB - Aviation Armament Bulletin.

AAC - Aviation Armament Change.

A ANT - Aft Antenna.

ABORT - Failure to complete an action, operation or procedure for any reason. It may occur at any point from initiation of an operation to completion.

ACCESSORY - An item which is required to mate the weapon or store to the aircraft and which remains as an integral part of the system. Examples: bomb racks, launchers, adapter cables, buffer connectors, shear wafers and motor fire cables.

ACFT - Aircraft.

AERO - Aeronautical Equipment Reference Ordinal.

AFB - Airframe Bulletin.

AFC - Airframe Change.

AFT - At, near, toward or back of stern of a ship or the tail of the aircraft.

AFTER ENGINE TURNUP - That time in the prior to launch evolution after the pilot has completed his pretaxi checklist.

A/G - Air to Ground.

AGM - Air Launched, Surface Attack, Guided Missile.

AIM - Air Launched, Intercept - Aerial, Guided Missile.

AIM-7 - A solid fuel, rocket propelled, air-to-air missile with a conventional weapon warhead using semi-active radar homing for guidance. Popular name Sparrow.

AIM-9 - A solid fuel, rocket propelled, air-to-air missile with a conventional weapon warhead using passive infrared homing for guidance. Popular name Sidewinder.

AIRBORNE STORES - Tanks (fuel and spray), pods (refueling, photo, ECM, etc.), targets and all similar items intended for carriage internally or externally by aircraft, including the racks, launchers, adapters and detachable pylons used for such carriage. This definition applies to items which are not normally separated from the aircraft in flight.

## **A1-F18AE-LWS-000**

### **Glossary**

**AIRBORNE WEAPONS** - All missiles, rockets, bombs, mines, torpedoes, pyrotechnics, ammunition, guns, gun pods and all similar items intended for carriage internally or externally by aircraft. This definition applies to items which are normally separated from the aircraft in flight.

**AIRCRAFT ARMAMENT SYSTEM** - Aircraft armament subsystems which, when interconnected, give the aircraft its airborne weapons/stores capability.

**AIRCRAFT CONFIGURATION** - The system and components required to carry or deliver a specific airborne weapon or store.

**AMAC** - Aircraft Monitor and Control.

**AMRAAM** - Advanced Medium Range Air to Air Missile.

**APAM** - Antipersonnel/Antimaterial.

**APU** - Auxiliary Power Unit which is used to drive either aircraft generator to allow functional checkout of the aircraft system or gun loading when external electrical or hydraulic power is unavailable.

**AREA, DEARMING** - That area where a weapon is changed from a state of readiness for initiation to a safe condition; when forward firing weapons are involved, the area ahead of the aircraft must be clear and maintained clear until completion of weapon safing.

**AREA, REARMING** - That area where an operation that replenished the prescribed airborne weapons/stores, ammunition, bombs, and other armament items for an aircraft is conducted. This operation may include fuze and any stray voltage checks as applicable.

**ARM, ARMING** - The action that places ammunition exploding devices in condition to detonate booster charges; fuze action change from a safe condition to a state of firing readiness.

**ARMING AREA** - That area where a weapon is changed from a safe condition to a state of readiness for initiation when forward firing weapons are involved, the area ahead of the aircraft must be clear and maintained clear until completion of launch.

**ARMING/RELEASE/EXTRACTOR WIRE** - A wire inserted in the fuze or arming mechanism of a weapon. The arming wire pulls out of the fuze or arming device when the bomb is dropped in the armed mode, thus putting the bomb into condition to explode when it hits.

**(AS APPLICABLE)** - Used in prefacing certain steps or procedures and meaning that if a step or procedure has not been previously accomplished, accomplish it at this point. This term may also be used in prefacing a procedure that applies to only one weapon in a group of weapons or one function in a group of functions. If it does not apply or has been previously accomplished, it may be omitted.

**ASE (ACCESSORY SUSPENSION EQUIPMENT)** - Items used in conjunction with an aircraft weapon system to expand the capability of a system, i.e. MER/TER, BRU-41/42, BRU-33, LAU-115, LAU-117, LAU-118 and LAU-127 missile launcher, etc., or to serve as an integral necessity for the complete functioning of a weapon system.

**AUTHORIZED** - That which is approved by responsible authority.

**AWB** - Airborne Weapon Bulletin.

### **Glossary-2**

AWC - Airborne Weapon Change.

**B**

BASB - Breakaway Suspension Band.

BDU - Bomb Dummy Unit.

BEFORE ENGINE TURNUP - That time in the prior to launch evolution when the pilot/flight crew is or are commencing general aircraft ground inspection or checks and extending until the inspection or checks are completed.

BIT - Built In Test.

BRU - Bomb Rack Unit.

**C**

CARTRIDGE - A complete assembly consisting of an initiator and a pressure producing propellant in a suitable case. In impulse cartridges there is no projectile. May be electrically or mechanically fired.

CAUTION - An operating procedure, practice, etc. which, if not strictly observed, could result in damage to or destruction of equipment.

CBU - Cluster Bomb Unit. Consists of a number of bombs (BLU or BDU) contained in a dispenser (SUU) or clustering device (CDU) and suspended from a bomb rack. May function while on rack or after release.

CCG - Computer Control Group.

CFAIL - Carriage Fail.

CHAN - Channel.

CHECKLIST - The term "checklist" as used in this manual refers to an individual sequence of procedures bearing a title and constituting a part of a publication designated as the loading checklist.

CONVENTIONAL WEAPONS - Nonnuclear weapons; excludes all biological weapons and generally excludes chemical weapons except for existing smoke, incendiary agents, and agents of the riot-control type.

**D**

DDI - Digital Display Indicator.

DEARMING AREA - That area where a weapon is changed from a state of readiness for initiation to a safe condition; when forward firing weapons are involved, the area ahead of the aircraft must be clear and maintained clear until completion of weapon safing.

DECM - Defensive Electronic Countermeasures.

DEGD - Degrade.

**Glossary**

DESIGNATED LOADING AREA - That area where an operation that replenishes the prescribed airborne stores, ammunition, bombs, and other armament items for an aircraft is conducted. When handling weapons in a rearming area, all fuzes and/or initiators shall remain safe and all gun chambers clear. This operation may include fuzing (i.e. bombs) and stray voltage checks, as applicable.

DETONATOR - An initiator designed to be set off by heat (flash), mechanical energy (stab, percussion) or electrical energy, to produce high velocity shock waves and high brisance.

DFIRS - Deployable Flight Incident Recorder Set.

DIGITAL DATA COMPUTERS - Digital data computers make up the mission computer system which control the aircraft avionics systems.

DOWNLOADING - An operation that removes airborne weapons or stores from an aircraft.

DUD - Explosive ammunition that has failed to function.

**E**

ECM - Electronic Countermeasures.

ECP - Engineering Change Proposal.

EMR - Electromagnetic Radiation.

ENCODER/DECODERS - Encoder/Decoders interface with the armament computer and weapon loaded.

ENSURE - A word added to a manual or checklist procedure to emphasize and make certain that a step or procedure is or has been accomplished.

EOD - Explosive Ordnance Disposal. Personnel with special training and equipment who render explosive ordnance safe (such as bombs, mines, projectiles, and booby traps), make intelligence reports on such ordnance, and supervise the safe removal thereof.

EPU - Electrical Power Unit.

ERDL - Extended Range Data Link.

**F**

F ANT - Forward Antenna.

FC - Firing Current.

FIN - A fixed or adjustable airfoil attached to a weapon to give directional stability.

FLIR - Forward Looking Infrared.

FMU - Fuze Munition Unit.

FOD - Foreign Object Damage or Foreign Object Damaging.

**FORWARD FIRING WEAPONS** - Weapons propelled in a forward direction. Examples: Missiles, rockets and guns.

**FUZE** - A term for the mechanical or electrical device used to initiate the detonation at the desired time.

**FUZE SETTING** - The preflight or inflight selected fuze arming delay or functioning time.

**FWD (FORWARD)** - At, near or toward the front of the aircraft, pylons leading edge of the wing.

## **G**

**GBU** - Guided Bomb Unit.

**GCG** - Guidance Control Group.

**GLIDE WEAPON** - A weapon having no propulsion, but having a guidance control unit.

**GP** - General Purpose (bombs).

**GROUND** - Electrical term for a conducting connection to the earth or some other conducting body at zero potential with respect to the earth.

**GUIDED WEAPON** - A weapon whose course may be altered inflight by a guidance control unit.

## **H**

**HARM** - High Speed Antiradiation Missile.

**HERO** - Hazards of Electromagnetic Radiation to Ordnance.

**HEI** - High Explosive Incendiary.

**HMI** - Handbook Maintenance Instruction.

**HUD** - Head-Up-Display.

## **I**

**IAAB** - Interim Aviation Armament Bulletin.

**IAAC** - Interim Aviation Armament Change.

**IAFC** - Interim Airframe Change.

**(IF APPLICABLE)** - Used in prefacing a step or procedure, meaning that if the accomplishment of a step or procedure is required, it is to be performed. If it is not required, it may be omitted.

**IGNITER** - Complete system of initiator, booster charge and main charge. Designed to produce sustained generation of hot particles, flame and gas.

**Glossary**

IMER - Improved Multiple Ejector Rack (BRU-41).

INFRARED - A portion of the electromagnetic spectrum whose wavelength/frequency falls between visible light and microwave.

INITIATOR - First device in a pyrotechnic or explosive assembly; squib, primer or detonator.

INTERVALOMETER - An electrical or electromechanical device which controls the release or firing of airborne weapon or stores at a specified interval or sequence.

IR - (See infrared).

IRAC - Interim Rapid Action Change.

ISEB - Interim Support Equipment Bulletin.

ISEC - Interim Support Equipment Change.

ITER - Improved Triple Ejector Rack (BRU-42).

ITL - Intent-to-Launch.

**J**

JDAM - Joint Direct Attack Munition.

JETTISON - Releasing an airborne weapon or store by an emergency or secondary release system.

JSOW - Joint Standoff Weapon.

**L**

LALS - Linkless Ammunition Loading System.

LANYARD - A device (normally a strong strap, cloth, or wire) used to actuate an arming or safing device on a weapon release.

LAU - Launch Adapter Unit (aircraft installed launcher).

LDGP - Low Drag General Purpose (bombs).

LDT - Laser Detector Tracker.

LDT/R - Laser Detector Tracker/Range.

LGTR - Laser Guided Training Round.

LOADING - An operation that installs airborne weapons or stores on or in an aircraft.

LOCKWIRE - (See safety wire).

LOS - Line of sight.

L/R - Left and/or Right.

LST - Laser Spot Tracker.

## **M**

MAK, MAU - Miscellaneous Armament Item Components or Units, previously used for bomb racks and bomb fins.

MAY - Used to indicate an acceptable, suggested or permitted means of accomplishment.

MER - Multiple Ejector Rack.

MHU - Aerial Stores (Munitions) Handling Units.

MIM - Maintenance Instruction Manual.

MISSILE LAUNCHER - Name for a device from which a self-propelled weapon that is controlled in flight, is started on its course. See Rocket Launcher.

MK - Mark.

MLG - Main Landing Gear.

MOD - Model or Modification.

MSL - Missile.

## **N**

NAVAER - Naval Aeronautics.

NAVAIR - Naval Air Systems Command.

NAVORD - Naval Ordnance Systems Command.

NAVSEA - Naval Sea Systems Command.

NAWCWD - Naval Air Warfare Center Weapons Division - China Lake, California.

NOTE - An operating procedure, condition, etc., which is essential to highlight.

## **O**

OFP - Operational Flight Program.

OP - Ordnance Publication.

**P**

**PARENT RACK** - Suspension/carrying units semipermanently attached to the aircraft.

**PASE (PRELOADED ACCESSORY SUSPENSION EQUIPMENT)** - A unit of accessory suspension equipment, i.e. MER/TER, BRU-41/42, BRU-33, LAU-115, LAU-117 and LAU-118 missile launcher, etc., which has been preloaded prior to attachment of the unit to the aircraft.

**PLUS (+) POSITION** - Normally referring to the 90-degree position (from the vertical centerline of the store) of the fins and wings.

**POSTLOADING** - An electrical, mechanical or visual inspection of airborne weapons or stores conducted after completion of loading.

**POWER REMOVED** - Engine(s) secured, all aircraft electrical circuits deenergized and electrically interrupted.

**PRELOADED** - Pertaining to the state of a weapon, dispenser, launcher or rack that is normally accomplished at an assembly area prior to loading on an aircraft.

**PRELOADED ARMING WIRE** - An arming wire installed with insufficient slack which could cause the arming wire to become disconnected from the fuze or a deenergized arming solenoid during taxi, take-off or by the airstream inflight.

**PRF** - Pulse Repetition Frequency.

**PRIMER** - An initiator designed to be set off by mechanical energy (percussion) or electrical energy, to produce a hot flame. May be used to initiate either detonating or deflagrating composition.

**PRIOR TO LAUNCH** - That period of time prior to the transition from static repose to dynamic flight of an aircraft. In association with airborne weapon or store load or postload, the prior to launch procedures are subdivided into those which may be conducted while the aircraft is in either of the following locations:

- a. Rearming Area.
- b. Arming Area.

**PROPER AUTHORITY** - Person or persons appointed or adapted to a particular situation who are qualified to make determinations or control the situation (i.e. immediate supervisor).

**PYROTECHNICS** - Mixtures of chemical compounds that produce a smoke or brilliant light in burning, used for signaling or for lighting up an area at night.

**R**

**RAC** - Rapid Action Change issued to provide timely information of changes to the manual.

**RADHAZ** - Radiation Hazards to Ordnance.

**REARMING** - (See Loading).



**REARMING AREA** - That area where an operation that replenishes the prescribed airborne weapons or stores and other armament items on or in an aircraft is conducted. When handling weapons in a rearming area all fuzes or initiators shall remain safe and all gun chambers clear. This operation may include fuzing (i.e. bombs) and stray voltage checks, as applicable.

**REC** - Record.

**RECOMMENDED** - Meaning those procedures or equipment which have been verified and recommended for use over certain other procedures or items of equipment.

**RELEASE AND CONTROL SYSTEM CHECK** - Functional test of an aircraft electrical or mechanical conventional weapon release or control subsystem.

**RESTRICTION** - A limitation or prohibiting of procedures, practices, conditions or use of an item or equipment that will endanger personnel, could result in damage or destruction or failure of an item or equipment or the improper use of the item.

**RF** - Radio Frequency.

**ROCKET** - A thrust producing system or a complete unguided missile which derives its thrust from ejection of hot gases.

**ROCKET LAUNCHER** - A device that fires self-propelled types of weapons.

**ROCKET WARHEAD** - The forward rocket component which contains the high explosive charge or other filler, booster, and the fuze propelled by a rocket motor.

**RUG** - Radar Upgrade.

## **S**

**SAFETY PIN** - A mechanical device used to interrupt the normal action of an ordnance device.

**SAFETY WIRE** - A wire set into a component to lock movable parts into safe or secure positions.

**SAIP** - Service Aircraft Instrumentation Package.

**SEAM** - Sidewinder Expanded Acquisition Mode. A means of slaving the AIM-9 optics to the air intercept radar to enhance tactical employment.

**SEB** - Support Equipment Bulletin.

**SEC** - Support Equipment Change.

**SERVICING** - The refilling of aircraft with consumables such as fuel, oil, and compressed gases to predetermined levels, pressures, quantities, or weights.

**SHALL** - Used to indicate a mandatory requirement.

**SHOULD** - Used to indicate a non-mandatory desire or preferred method of accomplishment.

**Glossary**

SIDEWINDER - (See AIM-9).

SLAM - Standoff Land Attack Missile.

SLANT (/) - A slant mark, also known as a solidus or virgule, implies that the nomenclature, terminology or procedural information is for one or several versions of a series of aircraft, weapons or accessories.

SMP - Stores Management Processor (armament computer).

SMS - Stores Management System.

SMUG - Stores Management Upgrade

SPARROW - (See AIM-7).

SPECIALIZED STORES - Stores of a specialized nature not covered in other weapon categories. Examples: Electronic countermeasure decoy dispenser, chaff/flares and external fuel tank.

STRAY VOLTAGE (SV) - The term used to designate an undesired voltage that exists between two specified points of a weapon system, and is capable of producing a flow of current when a designed electric measuring device is connected between the two points.

SUU - Stores suspension and release unit.

**T**

TACTS - Tactical Aircrew Combat Training System.

TDC - Target Designator Control.

TDD - Target Detecting Device.

TER - Triple Ejector Rack.

TP - Target Practice or ball ammunition.

TPDR - Technical Publication Deficiency Report.

TURNAROUND - The dearming or rearming procedures required between landing and takeoff to ready an aircraft for flight.

**U**

UNEXPENDED WEAPONS - Weapons that have not been subjected to attempt to fire or drop. They are presumed to be in a normal operating condition and can be fired or jettisoned, if necessary.

UNLOADING - (See downloading).

UR - Unsatisfactory Report.

UFC - Up-Front-Control.

USG - Unique Signal Generator.

**V**

VER - Vertical Ejector Rack (BRU-33).

VERIFIED - Proven to have been physically accomplished by the responsible organization.

VOLTAGE - Electric potential.

VT - Proximity fuze, so called because original devices contained one or more vacuum tubes.

VTR - Video Tape Recorder.

**W**

WARHEAD - The section of the weapon that carries the primary explosive charge.

WARNING - An operating procedure, practice, etc., which, if not correctly followed, could result in personnel injury or loss of life.

WEAPON SYSTEM - A weapon and all components required for its operation.

WEPD - Walleye Pod.

WIP - Weapon Insertion Panel.

WOW - Weight On Wheels.

WILL - Used to express a declaration of purpose.

**X**

XMT - Transmit.

X POSITION - Normally referring to the 45-degree position (from the vertical centerline of the store) of the fins and wings.

**Z**

ZRF - Zero Retention Force, arming unit.

ZUNI - A supersonic, unguided 5.0-inch folding fin aircraft A/G rocket.

